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MANAGEMENT BY RESULTS

REPORT

ABSTRACTS OF 1987-88 PLANNED RESULTS

JANUARY 1987

Ontario
Ministry of the Environment

Hon. Jim Bradley
Minister

Rod McLeod
Deputy Minister

MANAGEMENT BY RESULTS

REPORT

ABSTRACTS OF 1987 - 1988 PLANNED RESULTS

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MINISTRY OF THE ENVIRONMENT
POLICY AND PLANNING BRANCH

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INTRODUCTION

This report provides a statement of the Ministry's 1987-88 planned results. The summary document is intended for the use of Management Board and senior Ministry management; more specific details are provided in the Management By Results (MBR) Technical Appendices.

The twenty MBR projects defined within this report demonstrate progress towards the achievement of the Ministry's corporate environmental objectives:

- to ensure that drinking water supplies are adequate for the protection of human health;
- to ensure that all surface waters are of a quality that is satisfactory for aquatic life and recreational uses;
- to protect the quality of groundwater for the greatest number of beneficial uses;
- to ensure the fair sharing and conservation of surface and groundwater;
- to encourage the development of a water supply and sewage servicing infrastructure that will support the Province's economic and social development;
- to ensure an ambient air quality in Ontario that will have no detrimental effects on human health, or on the natural environment;
- to reduce or prevent detrimental effects on land, flora, fauna and people resulting from wastes not discharged to air or water;
- to promote the safe and proper use of pesticides; and
- to provide for the consideration of natural and environmental factors in the decision-making processes of the proponents of major undertakings.

In addition, a statement of plans for the Employment Equity Program related to equal employment opportunities for women is included.

The results indicators used in this report are of three types:

- operational outputs, describing the work performed within each of the twenty projects;
- program outputs, describing the client benefits produced by each project; and
- program effects, describing the consequences or impacts of each project.

The results information is also expressed in the form of:

- efficiency ratios, relating operational and program outputs to the corresponding inputs for each project; and
- effectiveness ratios, describing the extent to which objectives are achieved for each project.

The use of these indicators is explained in detail in the document "Manager's Guidelines to Managing by Results", 1982. Emphasis is placed on the provision of verifiable information related to program outputs and program effects.

The twenty MBR projects previously developed are continued in this report.

Both the planned utilization and the actual utilization of resources in this report are estimates based on allocations reported by managers throughout the Ministry. The Ministry's financial information systems do not support financial accounting of expenditures for the twenty MBR projects described herein. Consequently, detailed questions concerning expenditures should be directed to other documents.

Management By Results documentation is being implemented actively throughout the Ministry, and changes to the format and to the quality and quantity of data included are occurring with each report.. This document is compiled as one of a series of MBR reports by the Policy and Planning Branch using data from a number of sources internal and external to the Ministry. Any queries concerning the data in the MBR Reports or Technical Appendices should be directed initially to:

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MBR PROJECT ON THE PROTECTION OF DRINKING WATER SUPPLIES

OBJECTIVE

To regulate communal water supply facilities in order to provide safe drinking water for Ontarians.

DESCRIPTION

The resources assigned to this MBR Project include:

- the budget of the Policy and Planning Branch related to drinking water research,
- the person-years and budget of the Legal Services Branch related to drinking water legislation,
- the person-years and budget of the Office of the A.D.M., Environmental Services Division, related to drinking water quality issues,
- the person-years and budget of the Water Resources Branch related to the assessment of the health effects of contaminants which may occur in drinking water, the development of policies and plans to ensure safe drinking water, the development of methods for removing contaminants from drinking water, and the operation and maintenance of drinking water quality data bases,
- the person-years and budget of the Laboratory Services Branch related to the provision of tests of drinking water quality, and the development of analytical techniques for measuring contaminants in drinking water,
- the person-years and budget of the Investigations and Enforcement Branch related to the investigation of violations and enforcement of regulations and legislation pertaining to water supply,
- the person-years and budgets of the Regions related to monitoring the performance of communal water supply facilities and to developing remedial measures for systems delivering an unsatisfactory quality of drinking water,
- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to the certification of water supply facilities, and
- the person-years and budget of the Project Engineering Branch related to the provision of technical assistance to operating authorities.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of municipally operated communal water supply facilities	372	365*	375	372	376
No. of Ministry operated communal water supply facilities	99	98	101	98	102
No. of municipally and Ministry operated communal water supply facilities	471	463	476	470	478
No. of privately operated communal water supply facilities (est.)	1,728	1,351**	1,725	1,344	1,350
No. of private water wells (est.)	N/A	700,000	N/A	700,000	700,000
No. of contaminants of concern which may occur in drinking water in Ontario (approx.)	400	400	400	400	400

RESULTS

Results indicators are available only to a limited extent for privately operated communal water supply facilities. There is no comprehensive regulatory program for these facilities, although complaints are investigated. Except where otherwise noted, the results below apply only to municipally and Ministry operated facilities.

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* The decrease in number of municipally operated facilities between 1984-85 and 1985-86 is a result of the merging of several smaller facilities with larger water treatment systems.

** The decrease in number of privately operated facilities between 1984-85 and 1985-86 is attributable to data base improvements, as well as to the phasing out and merging of several smaller facilities with larger water treatment systems.

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of municipally and Ministry operated water supply facilities assessed for compliance with basic drinking water quality objectives*	465	444**	475	455	455
No. of privately operated water supply facilities assessed for compliance with basic drinking water quality objectives	381	470	364	521	549
No. of new or revised drinking water standards or guidelines established (cumulative total)	0	10	46	10	46
No. of investigations related to water supply compliance	N/A	2	N/A	12	14
No. of Certificates of Approval issued	844	995	N/A	1,300	1,400
No. of laboratory analyses conducted on drinking water samples:					
. Inorganic	N/A	180,900	100,000	198,400	188,200
. Organic	N/A	34,500	52,000	70,000	70,000
. Microbiological	N/A	122,200	76,000	123,400	119,600

* Basic drinking water quality objectives: Turbidity, Colour, Chlorine Residual, Fluoride, Microbiological Quality. Assessment of microbiological quality is based on one or more samples per week. Assessment of the other five basic parameters is based on annual averages.

** Figure revised from 1985-86 Results report.

The Ministry introduced a new Drinking Water Surveillance Program (DWSP) in 1985-86 for the on-going measurement and monitoring of drinking water in the Province for a wider range of tests including approximately 140 microbiological, organic and inorganic parameters. In the long term, the program will cover all municipal water supplies in Ontario.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of facilities monitored under DWSP	0	13	35	20	43

The facilities monitored under DWSP are listed in the MBR Technical Appendices.

Program Outputs

Municipally and Ministry Operated Facilities:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of assessed facilities meeting basic drinking water quality objectives	337 (72%)	333* (72%)	396 (83%)	370 (79%)	394 (82%)
No. of assessed facilities not fully meeting basic drinking water quality objectives	128 (27%)	111* (24%)	79 (17%)	85 (18%)	61 (13%)
No. of facilities with no assessments**	6 (1%)	19* (4%)	1 (-)	15 (3%)	23 (5%)

* Figures revised from 1985-86 Results report.

** Facilities with no assessments include facilities being phased in, phased out or on stand-by.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of problems resolved during year or with remedial measures under way at year-end	116	93	49	103	57
No. of problems with no remedial measures planned due to funding limitations or because failures are marginal or of an aesthetic nature	35	40	31	31	30
No. of problems occurring at facilities not fully meeting basic drinking water quality objectives	151	133	80	134	87

Privately Operated Facilities:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of assessed facilities meeting basic drinking water quality objectives	252 (15%)	293 (22%)	256 (15%)	435 (33%)	480 (36%)
No. of assessed facilities not fully meeting basic drinking water quality objectives	129 (7%)	177 (13%)	108 (6%)	86 (6%)	69 (5%)
No. of facilities with no assessments	1,347 (78%)	881 (65%)	1,361 (79%)	823 (61%)	801 (59%)

All Communal Water Supply Facilities:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of boil water orders issued by Health Units regarding communal water supply facilities:					
. Municipally operated	6	3	N/A	N/A	N/A
. Ministry operated	3	0	N/A	N/A	N/A
. Privately operated	18	64*	N/A	N/A	N/A
No. of charges laid related to water treatment compliance	N/A	2	N/A	15	17
No. of convictions obtained related to charges laid	N/A	0	N/A	N/A	N/A

Private Wells:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of households with contaminated private wells which were supplied with bottled water	N/A	36	N/A	N/A	N/A
No. of households with contaminated private wells which were connected to alternative water supplies	N/A	207	N/A	N/A	N/A

A summary of the failures identified and the remedial measures initiated for water supply facilities is provided in the MBR Technical Appendices.

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* The apparent increase between 1984-85 and 1985-86 is attributable to data base improvements.

Program Effects

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Population serviced by facilities meeting basic drinking water quality objectives	7,100,000	6,900,000*	7,550,000	7,050,000	7,300,000
Population serviced by facilities not fully meeting basic drinking water quality objectives	700,000	500,000*	250,000	440,000	200,000

There are no known serious health effects associated with failures to meet basic drinking water quality objectives in Ontario.

EFFICIENCY

Operational Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of municipally, Ministry, and privately operated facilities assessed for compliance with basic drinking water quality objectives per person-year	10.1	9.6	8.7	9.7	9.3

Program Efficiency — Indicators not developed

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* Figures revised from 1985-86 Results report.

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% of overall capacity of municipally and Ministry operated facilities assessed meeting basic drinking water quality objectives	91%	93%*	96%	94%	97%

Effectiveness is partially dependent on the availability of capital funds for remedial measures. The provincial component of these funds is identified in the MBR Project on Water Servicing Infrastructure.

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	4,498	6,340	6,019	7,907	7,812
. Person-Years	84	95	96	101	108

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* Figure revised from 1985-86 Results report.

MBR PROJECT ON THE OPERATION OF MINISTRY WATER SUPPLY FACILITIES

OBJECTIVE

To operate water supply facilities on behalf of municipalities in Ontario and to undertake any in-plant remedial measures required to provide sufficient quantities of safe water.

DESCRIPTION

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to the provision of operating agreements,
- the person-years and budget of the Laboratory Services Branch related to the provision of tests of drinking water quality and the development of analytical techniques for measuring contaminants in drinking water,
- the person-years and budgets of the Regions required to operate and manage Ministry-owned water supply facilities,
- the person-years and budget of the Financial and Capital Management Branch associated with the collection of operating revenues and the establishment of water rates, and
- the person-years and budget of the Project Engineering Branch related to the provision of operational support to Ministry water supply facilities.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of water supply facilities operated	99	98	101	98	102

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of water supply facilities and systems transferred from MOE to municipalities	4	0	N/A	0	0
No. of water supply facilities and systems transferred from municipalities to MOE	1	3	3	8	1

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Pumpage (10^3 m^3/d)	657	700	682	771	795
No. of water supply facilities assessed for compliance with basic drinking water quality objectives* and water quantity demands	97	95	100	95	95
No. of laboratory analyses conducted on samples from Ministry water supply facilities:					
. Inorganic	N/A	68,000	52,000	73,000	72,000
. Organic	N/A	41,200	76,000	76,000	76,000
. Microbiological	N/A	58,000	16,000	60,000	59,500

* Basic drinking water quality objectives: Turbidity, Colour, Chlorine Residual, Fluoride, Iron and Microbiological Quality. Assessment of microbiological quality is based on one or more samples per week. Assessment of the other five basic parameters is based on annual averages.

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of facilities meeting basic drinking water quality objectives and water quantity demands	63 (64%)	63 (64%)	85 (84%)	72 (74%)	78 (76%)
No. of facilities not fully meeting basic drinking water quality objectives, or water quantity demands	34 (34%)	32 (33%)	15 (15%)	23 (23%)	17 (17%)
No. of facilities with no assessments	2 (2%)	3 (3%)	1 (1%)	3 (3%)	7 (7%)
No. of capital improvements required at facilities not fully meeting basic drinking water quality objectives or water quantity demands	22	15	6	16	10
No. of operational improvements or other actions required at facilities not fully meeting basic drinking water quality objectives	9	7	2	5	1
No. of operational improvements under way or completed at year-end	8	6	2	5	1

Of the 98 water supply facilities being operated by the Ministry in 1986-87, 18 facilities did not fully meet basic drinking water quality objectives and 5 failed water quantity objectives. At the 23 failing facilities, 26 different problems were identified, 21 of which had remedial actions undertaken. Where no remedial measures were under way in 1986-87, the problems were either of an aesthetic nature only or the project was halted due to lack of funds. A summary of the failures identified and remedial measures initiated for Ministry water supply facilities is provided in the MBR Technical Appendices.

Program Effects

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Population serviced by facilities meeting basic drinking water quality objectives	1,220,000	1,090,000	1,513,000	1,140,000	1,160,000
Population serviced by facilities not fully meeting basic drinking water quality objectives	310,000	35,000	17,000	25,000	11,000
No. of facilities with outstanding appeals against water rates	9	9	0	1	0
Estimated cost to resolve appeals ($000s)	10,344	6,332	0	0	0
No. of facilities for which additional assistance is required to resolve problems related to water service costs	N/A	30	0	2	0
Estimated cost to resolve problems ($000s)	N/A	38,796	0	293	0
No. of facilities for which revenue loss due to constraints in water rates is being written off	N/A	44	0	0	0
Estimated cost of write-offs ($000s)	N/A	1,190	0	0	0

Sufficient quantities of communally supplied water support continued growth of the provincial economy, including the development of new housing stock.

EFFICIENCY

Operational Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Cost/m^3 drinking water (¢/m^3)	10.4	11.5	12.1	10.4	10.6
Pumpage/person-year (10^3 m^3/d)	2.6	2.6	2.4	2.9	3.0

Program Efficiency — Indicators not developed

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% of overall capacity of Ministry-operated facilities assessed meeting basic drinking water quality objectives	95%	96%	98%	98%	99%

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	24,913	29,283	30,195	29,136	30,753
. Person-Years	254	265	279	263	269
. Revenue ($000s)	44,453	49,659	42,500	50,708	52,651

MBR PROJECT ON WATER SERVICING INFRASTRUCTURE

OBJECTIVE

To assist municipalities in Ontario with the construction of private or communal water infrastructure in order to provide safe drinking water, solve water supply problems, increase the supply of serviced lots and provide for urban growth.

DESCRIPTION

The resources assigned to this MBR project include:

- the Ministry's capital budgets for water servicing infrastructure development,
- funds for the repair of concrete water tanks,
- the person-years and budget of the Legal Services Branch related to the development of agreements with municipalities for the provision of water servicing infrastructure,
- the person-years and budget of the Water Resources Branch related to the provision of hydrologic information,
- the person-years and budget of Financial and Capital Management Branch associated with capital expenditure control, revenue collection and rate reviews,
- the person-years and budgets of the Project Engineering Branch and of the Regions related to the preliminary development stages and the approval stages of water servicing projects, and
- the person-years and budget of the Project Engineering Branch associated with the engineering and construction of provincial water servicing facilities and systems, and with grants administration.

SCOPE

Program clients include all municipalities with population densities sufficient to justify a communal water servicing infrastructure and municipalities with widespread private well contamination problems which cannot be resolved by individual actions.

RESULTS

Operational Outputs

	1984-85		1985-86		1986-87 Planned		1986-87 Preliminary Actual		1987-88 Proposed	
	Ongoing	Completed	Ongoing	Completed	Ongoing	Completed	Ongoing	Completed	Ongoing	Complete
No. of projects:										
. Disbursement	7	9	9	5	4	11	4	13	Proposed results will be transmitted to Management Board when the final selection of projects to be funded is made.	
. Up-Front Grant	83	73	180	79	161	160	142	179		
. Low Cost Alternative	29	23	33	11	17	26	12	21		
	119	105	222	95	182	197	158	213		

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of urban expansion needs, water quality problems and water supply problems identified as requiring capital expenditures for correction*:					
. Resolved during the year by project completions	164	96	186	229	Proposed results will be transmitted to Management Board when the final selection of projects to be funded is made.
. Addressed during year but incomplete at year-end	201	242	209	175	
. Not being addressed within funding allocation	393	237	38	38	
	758	575	433	442	

A detailed breakdown of the status of problems is provided in the MBR Technical Appendices.

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* A need or problem is considered identified when submissions by municipalities to MOE have been approved as being eligible for grants.

Program Effects

The overall adequacy of the Province's water servicing infrastructure is indicated below.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Infrastructure capacity (maximum daily pumpage 10^3 m^3/d)	9,700	9,900	9,700	10,100	10,100
Water demands(average daily pumpage 10^3 m^3/d)	4,550	4,600	4,625	4,900	5,000

There are a variety of social and economic consequences of meeting local water supply and water quality needs. These will be identified in future reports.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicator under revision

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	76,496	72,007	44,448	69,741	78,255
. Person-Years	52	47	51	42	43
. Revenue ($000s)	18,278	8,800	10,000	5,406	5,558

MBR PROJECT ON THE REGULATION OF COMMUNAL SEWAGE TREATMENT FACILITY DISCHARGES

OBJECTIVE

To regulate communal sewage treatment facilities in Ontario in order to limit their discharges to quantities and rates that will protect the natural environment, human health and well-being and which will allow the greatest number of beneficial water uses.

DESCRIPTION

The resources assigned to this MBR project include:

- the budget of the Policy and Planning Branch related to sewage treatment facility research,
- the person-years and budget of the Legal Services Branch related to legal actions against sewage treatment facility owners for polluting water courses,
- the person-years and budget of the Water Resources Branch related to sewage treatment discharge policies and planning, the evaluation of sewage treatment processes and technology, and the resolution of operating problems at sewage facilities,
- the person-years and budget of the Laboratory Services Branch related to testing sewage treatment facility effluents and downstream water quality,
- the person-years and budget of the Investigations and Enforcement Branch related to the investigations and enforcement of regulations and legislation pertaining to sewage treatment,
- the person-years and budgets of the Regions related to the inspection of sewage treatment facilities and the regulation of their discharges, and
- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to the certification of sewage treatment facilities and the provision of technical assistance to operating authorities.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of municipally operated sewage treatment facilities	171	171	178	173	177
No. of Ministry operated sewage treatment facilities	229	232	233	232	238
No. of municipally and Ministry operated sewage treatment facilities	400	403	411	405	415
No. of privately operated communal sewage treatment facilities with discharges to surface waters	139*	136	131*	136	130

MAGNITUDE OF DISCHARGES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total discharges of suspended solids, oxygen demand and phosphorus (Mg/d)**	188	198	192	201	204

RESULTS

The results presented below relate mainly to municipally and Ministry operated sewage treatment facilities which discharge to surface waters. Information on privately operated communal sewage treatment facilities with discharges to surface waters is limited. Except where otherwise noted, data presented below relate to municipally and Ministry operated facilities. Discharges from private facilities are believed to be of minor consequence.

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* Figures revised from 1984-85 Results and 1986-87 Planned Results reports.

** 1 Mg = 1 tonne.

Operational Outputs

The Ministry is developing a Municipal-Industrial Strategy for Abatement (MISA) for controlling municipal sewage and industrial wastewater discharges to surface waters. MISA provides for compliance with clearly defined effluent limits. Regulations will enforce effluent standards based on the more stringent of either best available technology or site-specific water quality constraints. Development of Monitoring Regulations is under way. Effluent Limits Compliance Regulations will be promulgated for all major industries and for municipally and Ministry operated sewage treatment facilities by the end of 1989. The Ministry released a White Paper outlining the intent, rationale and agenda for regulation development in June 1986.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sewage treatment facilities assessed for compliance with effluent requirements:*					
. Municipally and Ministry operated	400	393	409	381	388
. Privately operated	90	86	106	101	114
No. of investigations related to sewage treatment compliance	N/A	4	N/A	30	35
No. of Certificates of Approval issued	1,173	1,292	1,175	1,910	2,000
No. of laboratory analyses conducted on samples from communal sewage treatment facilities:					
. Inorganic	N/A	85,400	45,000	85,600	84,200
. Organic	N/A	2,100	15,000	15,000	40,000
. Microbiological	N/A	12,200	5,000	12,300	12,500

* Effluent requirements at all sewage treatment facilities pertain to the annual average level of BOD_5 and suspended solids and at most facilities also to total phosphorus. Effluent requirements differ between types of treatment facilities and sometimes also differ on a location specific basis. Detailed information on required effluent levels is provided in the MBR Technical Appendices.

Program Outputs

Ministry and Municipality Operated Facilities:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of assessed facilities in compliance with effluent requirements	309 (77%)	293 (73%)	390 (95%)	335 (83%)	358 (86%)
No. of assessed facilities not in compliance with effluent requirements on an annual average basis	91 (23%)	100 (25%)	19 (5%)	46 (11%)	30 (7%)
No. of facilities with no assessments*	0 (-)	10 (2%)	2 (-)	24 (6%)	27 (7%)
No. of problems resolved during year or with remedial measures under way at year-end	156	124	40	73	33
No. of problems with no remedial measures planned due to funding limitations or because failures are marginal or of an aesthetic nature	17	33	7	22	16
No. of problems occurring at facilities not meeting effluent requirements on an annual average basis	173	157	47	95	49

* Facilities with no assessments include facilities being phased in, phased out or on stand-by, and lagoons which do not discharge on an annual basis.

Privately Owned and Operated Facilities:

No. of assessed facilities in compliance with effluent requirements	85 (61%)	82 (60%)	105 (80%)	101 (74%)	114 (88%)
No. of assessed facilities not in compliance with effluent requirements on an annual average basis	5 (4%)	4 (3%)	1 (1%)	0 (0%)	0 (0%)
No. of facilities with no assessments	49 (35%)	50 (37%)	25 (19%)	35 (26%)	16 (12%)

Program Effects

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Population serviced by facilities meeting effluent requirements*	4,640,000	3,550,000	6,520,000	6,200,000	6,400,000
Population serviced by facilities not meeting effluent requirements on an annual average basis*	2,390,000	3,400,000	510,000	820,000	590,000

A summary of the failures identified and remedial measures initiated for sewage treatment facilities is provided in the MBR Technical Appendices.

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* Significant variations occur from year to year as a result of the marginal compliance/non-compliance status of several large sewage treatment facilities which discharge to the Great Lakes.

Inadequate treatment may alter the quality of the receiving waters into which sewage effluents are discharged. The figures below enumerate the tertiary watersheds affected by local sewage treatment facility discharges. Detailed statistics on the 144 tertiary watersheds in the Province are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds affected by sewage treatment facility discharges:					
. Surface Water	36 (25%)	39 (27%)	36 (25%)	39 (27%)	39 (27%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Environmental effects resulting from sewage treatment facility effluent discharges include:

. reduced in-stream oxygen levels,
. excessive aquatic growth and poor aesthetics, and
. bacterial or viral contamination.

Localized downstream impacts in watersheds receiving sewage treatment facility effluents are summarized below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with localized areas unsuitable for drinking water supply	5	5	5	5	5
No. of watersheds with areas requiring high water treatment costs	5	5	5	5	5

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with areas unsuitable for contact recreation	17	18	17	18	18
No. of watersheds with areas of reduced amenity for non-contact recreation	7	7	7	7	7
No. of watersheds with areas of poor quality or reduced fishing	22	25	22	25	25
No. of watersheds with downstream damages to special or unique features	3	4	3	4	4
No. of watersheds with areas unsuitable for livestock watering	1	1	1	1	1

In 26 of the watersheds, remedial measures or studies were being undertaken in 1985-86 to remedy water quality problems.

Treatment of sewage leaves a residual sludge which requires disposal. The breakdown of sludge quantities by type of disposal is provided below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of sludge generated (10^3 Mg/yr)	6,300	6,300	6,500	6,400	6,400

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of sludge placed in drying beds or municipal landfill (10^3 Mg/yr)*	1,500	1,400	600	1,100	600
Quantity of sludge incinerated (10^3 Mg/yr)**	3,100	3,500	4,300	3,800	4,400
Quantity of sludge utilized on agricultural land, composted, or used for mine tailings rehabilitation (10^3 Mg/yr)***	1,700	1,300	1,500	1,300	1,200
Quantity of sludge disposed of through other means (10^3 Mg/yr)	N/A	100	100	200	200

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* Refer to the MBR Project on the Management of Municipal Wastes Directed to Landfill for information on landfill sites.

** Refer to the MBR Project on the Management of Point Sources of Air Pollution for information on incineration.

*** Refer to the MBR Project on the Utilization of Sewage Sludge and the Management of Subsurface Sewage Systems for information on sludge utilization.

EFFICIENCY

Operational Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of facilities assessed per person-year	5.3*	7.7	8.3	7.0	6.8

Program Efficiency — Indicators not developed

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% of overall capacity of municipally and Ministry operated facilities assessed in compliance with effluent requirements	65%	53%	93%	87%	92%

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	4,159	4,975	3,658	6,961	7,536
. Person-Years	76	62	62	69	73
. Revenue ($000s)	513	155	400	766	533

* The 1984-85 Results figure did not include private facilities.

MBR PROJECT ON THE OPERATION OF MINISTRY SEWAGE TREATMENT FACILITIES

OBJECTIVE

To operate sewage treatment facilities on behalf of municipalities in Ontario and to undertake any in-plant remedial measures required in order to meet sewage effluent requirements.

DESCRIPTION

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to the provision of operating agreements,
- the person-years and budget of the Water Resources Branch related to the resolution of operating problems at Ministry sewage treatment facilities,
- the person-years and budget of the Laboratory Services Branch related to testing sewage treatment facility effluents and downstream water quality,
- the person-years and budgets of the Regions required to operate and manage Ministry-owned sewage treatment facilities,
- the person-years and budget of the Financial and Capital Management Branch associated with the collection of operating revenues, and
- the person-years and budget of the Project Engineering Branch related to the provision of operational support to Ministry sewage treatment facilities.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sewage treatment facilities operated	229	232	233	232	238
No. of sewage treatment facilities and systems transferred from MOE to municipalities	0	0	2	10	1
No. of sewage treatment facilities and systems transferred from municipalities to MOE	4	4	1	13	1

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Flow (10^3 m^3/d)	1,040	1,100	1,085	1,121	1,142
No. of sewage treatment facilities assessed for compliance with effluent requirements*	229	232	231	226	226

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* Effluent requirements at all sewage treatment facilities pertain to the annual average level of BOD_5 and suspended solids and at most facilities also to total phosphorus. Effluent requirements differ between types of treatment facilities and sometimes also differ on a location specific basis. Detailed information on required effluent levels is provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of laboratory analyses conducted on samples from Ministry sewage treatment facilities:					
. Inorganic	N/A	109,200	45,000	108,200	109,200
. Organic	N/A	1,500	15,000	15,000	40,000
. Microbiological	N/A	15,300	5,000	9,500	9,600

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of facilities in compliance with effluent requirements	181 (79%)	179 (77%)	219 (94%)	196 (84%)	211 (89%)
No. of facilities not in compliance with effluent requirements on an annual average basis	48 (21%)	53 (23%)	12 (5%)	30 (13%)	15 (6%)
No. of facilities with no assessments*	0 (-)	0 (-)	2 (1%)	6 (3%)	12 (5%)
No. of capital improvements required at facilities not in compliance with effluent requirements on an annual average basis	39	38	14	23	9

* Facilities with no assessments include facilities being phased in, phased out or on stand-by, and lagoons which do not discharge on an annual basis.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of operational improvements or other actions required at facilities not in compliance with effluent requirements on an annual average basis	31	29	12	15	11
No. of operational improvements under way or completed at year-end	29	26	10	14	10

Of the 232 Ministry sewage treatment facilities that were operating in 1986-87, 30 were identified as not meeting effluent requirements on an annual average basis. At the failing facilities, 59 different problems were identified, 38 of which had remedial actions undertaken. Where no remedial measures were under way in 1986-87, the problems were either of an aesthetic nature only or the project was halted due to lack of funds. A summary of the failures identified and remedial measures initiated for Ministry sewage treatment facilities is provided in the MBR Technical Appendices.

Program Effects

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Population serviced by facilities in compliance with effluent requirements	1,300,000	1,320,000	1,570,000	1,380,000	1,530,000
Population serviced by facilities not in compliance with effluent requirements on an annual average basis	300,000	300,000	30,000	250,000	110,000
No. of facilities with outstanding appeals against sewage rates	3	4	0	2	0

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Estimated cost to resolve appeals ($000s)	1,374	1,647	0	0	0
No. of facilities for which additional assistance is required to resolve problems related to sewage service costs	N/A	41	0	8	0
Estimated cost to resolve problems ($000s)	N/A	131,885	0	2,960	0
No. of facilities for which revenue loss due to constraints in sewage rates is being written off	N/A	87	0	0	0
Estimated cost of write-offs ($000s)	N/A	4,085	0	0	0

Adequate sewage capacity supports continued growth of the provincial economy, including the development of new housing stock.

EFFICIENCY

Operational Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Cost/m^3 sewage (¢/m^3)	11.1	11.8	12.9	13.6	14.0
Flow processed/person-year (10^3 m^3/d)	2.1	2.3	2.3	2.3	2.3

Program Efficiency

Indicators not developed

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% of overall capacity of Ministry operated facilities assessed in compliance with effluent requirements	81%	85%	99%	87%	94%

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	42,389	47,574	51,281	55,459	58,354
. Person-Years	501	488	465	490	496
. Revenue ($000s)	66,976	76,550	72,500	79,308	82,351

MBR PROJECT ON SEWAGE SERVICING INFRASTRUCTURE

OBJECTIVE

To assist municipalities in Ontario with the construction of private or communal sewage infrastructure in order to prevent public health and environmental pollution problems, increase the supply of serviced lots, and provide for urban growth.

DESCRIPTION

The resources assigned to this MBR project include:

- the Ministry's capital budgets for sewage servicing infrastructure development,
- the person-years and budget of the Legal Services Branch related to the development of agreements with municipalities for the provision of water servicing infrastructure,
- the person-years and budgets of the Environmental Approvals and Land Use Planning Branch and of the Regions related to the preliminary development stages and the approval stages of sewage servicing projects,
- the person-years and budget of the Financial and Capital Management Branch associated with capital expenditure control, revenue collection and rate reviews, and
- the person-years and budget of the Project Engineering Branch associated with the engineering, construction and commissioning of provincial sewage treatment facilities and systems, and grants administration.

SCOPE

Program clients include all municipalities with population densities sufficient to justify a communal sewage servicing infrastructure and municipalities with widespread septic tank defects that cannot be resolved by individual actions.

RESULTS

Operational Outputs

	1984-85		1985-86		1986-87 Planned		1986-87 Preliminary Actual		1987-88 Proposed	
	Ongoing	Completed	Ongoing	Completed	Ongoing	Completed	Ongoing	Completed	Ongoing	Complete
No. of projects:										
. Disbursement	14	12	9	11	8	15	11	21	Proposed results will be transmitted to Management Board when the final selection of projects to be funded is made.	
. Up-Front Grant	83	60	168	60	138	133	107	170		
. Low Cost Alternative	25	18	18	6	8	26	7	29		
	122	90	195	77	154	174	125	220		

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of urban expansion needs and water quality problems identified as requiring capital expenditures for correction*:					
. Resolved during the year by project completions	146	96	247	265	Proposed results will be transmitted to Management Board when the final selection of projects to be funded is made.
. Addressed during year but incomplete at year-end	158	258	157	142	
. Not being addressed within funding allocation	374	180	37	31	
	678	534	441	438	

A detailed breakdown of the status of problems is provided in the MBR Technical Appendices.

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* A need or problem is considered identified when submissions by municipalities to MOE have been approved as being eligible for grants.

Program Effects

The overall adequacy of the Province's sewage servicing infrastructure is indicated below.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Infrastructure capacity (maximum daily flow 10^3 m^3/d)	6,000	6,000	6,100	6,000	6,000
Service demands (average daily flow 10^3 m^3/d)	4,800	4,900	4,900	5,000	5,100

There are a variety of social and economic consequences of meeting local sewage servicing needs. These will be identified in future reports.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators under revision

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	86,169	80,603	77,328	71,145	79,882
. Person-Years	59	53	66	50	51
. Revenue ($000s)	61,813	43,477	20,000	27,002	28,068

MBR PROJECT ON SURFACE WATER AND GROUNDWATER QUANTITY MANAGEMENT

OBJECTIVE

To regulate the water well industry and major water withdrawers in Ontario so as to provide for the fair sharing and conservation of the available surface water and groundwater.

DESCRIPTION

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to the development of legislation and regulations concerning water quantity management, and prosecutions of well-drillers and water drawers under the Ontario Water Resources Act,
- the person-years and budget of the Water Resources Branch related to the administration of the water-taking permit program, the provision of hydrologic information, the maintenance of the hydrologic network, and program planning,
- the person-years and budget of the Investigations and Enforcement Branch related to the investigations of violations and enforcement of regulations and legislation pertaining to water taking, and
- the person-years and budgets of the Regions related to the issuing of water-taking permits, the assembling of water use information, the auditing of well construction contractors, the monitoring of streamflow and the investigation of public complaints concerning water use interferences.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of well contractors	) 450	385	) 350	500	900
No. of well technicians	)	N/A	)	500	1,000
No. of major water withdrawers:*					
. Agricultural	3,018	3,012	4,150	3,000	3,000
. Industrial/Commercial	718	769	740	785	800
. Municipal	761	755	790	755	755
. Recreational	808	764	530	770	780
	5,305	5,300	6,210	5,310	5,335

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of new applications for well contractors' licences processed	) 10	) 8	) 10	100	400
No. of new applications for well technicians' licences processed	)	) N/A	)	550	500

* As indicated by number of water-taking permit holders. Major water withdrawers who initiated water-takings prior to 1961 are not included.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of well contractors' licences issued	450	385	350	500	375
No. of well technicians' licences issued		0		525	450
No. of water well records processed	6,048	6,000	6,000	2,000	6,000
No. of new water wells inspected	2,049	2,000	2,200	800	2,500
No. of water-taking permits renewed	259	320	259	265	270
No. of new water-taking permits issued	231	231	230	235	240
No. of water-taking permits expired and not renewed	270	91	270	90	90
No. of water-taking permits cancelled	97	67	95	65	65
No. of investigations related to well drilling/water taking compliance	N/A	0	N/A	10	12
No. of charges laid related to well drilling/water taking compliance	N/A	0	N/A	6	7

Program Outputs

No. of well contractors' licences withdrawn due to poor performance	0	0	0	0	0
No. of well technicians' licences withdrawn due to poor performance					

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of new municipal groundwater supplies identified (MOE-financed projects)	3	3	N/A	4	4
No. of new water wells installed	8,155	9,853	8,500	5,400	10,000
Daily water usage (10^6 m^3/d):					
. Agricultural					
- maximum authorized	4.0	3.0	4.0	4.0	4.0
- est. actual usage	N/A	2.5	N/A	2.5	2.5
. Industrial/Commercial					
- maximum authorized	190.0	144.0	190.0	144.0	144.0
- est. actual usage	N/A	143.0	N/A	143.0	143.0
. Municipal					
- maximum authorized	2.0	1.6	2.0	1.6	1.6
- est. actual usage	N/A	1.5	N/A	1.5	1.5
. Recreational					
- maximum authorized	2.0	3.1	2.0	3.1	3.1
- est. actual usage	N/A	3.0	N/A	3.0	3.0
	198.0	151.7	198.0	152.7	152.7
	N/A	150.0	N/A	150.0	150.0
No. of individual water use conflicts:					
. Resolved during the year	91	35	N/A	N/A	N/A
. Outstanding at year-end	37	20	N/A	N/A	N/A

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of water-taking permit holders using excessive quantities of water	N/A	24	24	24	24
No. of convictions obtained related to charges laid	N/A	7	N/A	N/A	N/A

Program Effects

The water quantity management program provides for the fair sharing and conservation of surface water and groundwater.

For each of the 144 tertiary watersheds in the Province, the major water uses, problems associated with these uses, the environmental effects and the major impacts are identified in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with major water use problems	36 (25%)	35 (24%)	35 (24%)	35 (24%)	35 (24%)

The major impacts resulting from excessive water withdrawals in the affected watersheds are summarized below. Some watersheds have several impacts.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with limitations on additional water use	16	22	15	22	22
No. of watersheds with damage or alteration to special or unique features resulting from low flows	2	10	2	10	10

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds having interference with water withdrawals	17	24	16	24	24
No. of watersheds having interference with in-stream water uses	5	11	5	11	11
No. of watersheds with other impacts	4	7	4	7	4

In 1985-86, assessment monitoring or studies were being undertaken in 18 of the 35 affected watersheds to investigate solutions to water quantity problems.

EFFICIENCY Indicators not developed

EFFECTIVENESS Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	1,297	1,393	1,283	1,471	1,557
. Person-Years	25	25	22	24	25
. Revenue ($000s)	1	7	6	15	15

MBR PROJECT ON THE MANAGEMENT OF INDUSTRIAL AND COMMERCIAL POINT SOURCES OF WATER POLLUTION

OBJECTIVE

To manage the discharge of industrial and commercial point sources of water pollution in Ontario at quantities and rates that will protect the natural environment, human health and well-being and that will allow the greatest number of beneficial water uses.

DESCRIPTION

The resources assigned to this MBR project include:

- the budget of the Policy and Planning Branch related to the provision of research funding concerning industrial wastewater discharges and their effects,
- the person-years and budget of the Legal Services Branch related to the legal actions against industries concerning water pollution,
- the person-years and budget of the Office of the A.D.M., Environmental Services Division, related to industrial point source water pollution issues,
- the person-years and budget of the Water Resources Branch related to the development of policies and plans for the control of industrial wastewater discharges, the evaluation of industrial technologies, and the provision of assistance to the Regions on industrial wastewater issues,
- the person-years and budget of the Laboratory Services Branch related to the testing of surface water and groundwater samples for industrial and commercial pollutants, and the development of analytical techniques for measuring industrial pollutants in water and in the aquatic ecosystem,
- the person-years and budget of the Hazardous Contaminants Branch related to the review or establishment of standards for pollutants in industrial wastewater,
- the person-years and budget of the Office of the A.D.M., Operations Division, related to the management of industrial water pollution issues,
- the person-years and budget of the Intergovernmental Relations and Strategic Projects Division related to the investigation of industrial wastewater discharges into the Niagara, Detroit, St. Clair and St. Mary's Rivers and Lake St. Clair,

- the person-years and budget of the Investigations and Enforcement Branch related to investigations and enforcement of sources in non-compliance with industrial wastewater discharge objectives,

- the person-years and budgets of the Regions related to the inspection, monitoring, and regulation of industrial sources of water pollution, the resolution of complaints regarding industrial water pollution and the inspection and monitoring of commercial marinas,

- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to the review of applications for Certificates of Approval for industrial discharges and for policy reviews, administration and co-ordination of marina inspections, and

- the person-years and budget of the Spills Action Centre related to the development of emergency response capabilities and the response to industrial spills.

(1) INDUSTRIAL AND COMMERCIAL POINT SOURCE DISCHARGES

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of industrial and commercial point sources in Ontario	11,000	11,000	11,000	11,000	11,000
No. of water contaminants of concern (approx.)	400	400	400	400	400
No. of water contaminants under MBR reporting	18	22	21	22	22
No. of industrial facilities with direct discharges to surface waters under MBR reporting	109	102*	104	102	102
No. of spills (est.)	N/A	5,000	N/A	5,000	5,000

* Figure revised from 1985-86 Results report.

MAGNITUDE OF DISCHARGES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total discharges of suspended solids, oxygen demand and phosphorus (Mg/d)**	550 (87)*	480*** (96)*	510 (97)*	490 (96)*	540 (96)*

RESULTS

Operational Outputs

The Ministry is developing a Municipal-Industrial Strategy for Abatement (MISA) for controlling municipal sewage and industrial wastewater discharges to surface waters. MISA provides for compliance with clearly defined effluent limits. Regulations will enforce effluent standards based on the more stringent of either best available technology or site-specific water quality constraints. Development of Monitoring Regulations is under way. Effluent Limits Compliance Regulations will be promulgated for all major industries by the end of 1988 and for municipally and Ministry operated sewage treatment facilities by the end of 1989. The Ministry released a White Paper outlining the intent, rationale and agenda for Regulation development in June 1986.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of Certificates of Approval issued	79	55	80	100	127
No. of chemicals or compounds assessed for ambient water quality standard setting purposes:					
. Reviewed	N/A	23	N/A	12	) 50
. Approved	N/A	17	N/A	20	)

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* No. of major industrial and commercial point sources contributing to total discharge figures.
** 1 Mg = 1 tonne.
*** Figure revised from 1985-86 Results report.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of chemical compounds assessed for multi-media standard setting purposes	20	16	45	41	25
No. of scientific criteria documents completed	1	0	0	1	4
No. of investigations related to industrial wastewater discharge compliance	N/A	45	N/A	100	115
No. of charges laid for industrial sources not in compliance with industrial wastewater discharge objectives	N/A	156	N/A	75	86
% of spills involving field responses	N/A	80-90%	N/A	80-90%	80-90%
No. of notices of loss received under Part IX, Environmental Protection Act (E.P. Act)	N/A	14	N/A	66	N/A
No. of applications for compensation processed under Part IX, E.P. Act	N/A	0	N/A	0	N/A
No. of projects to which the Security Fund is applied	N/A	16*	15	45	45
No. of laboratory analyses conducted on samples related to industrial and commercial point sources of water pollution:					
. Inorganic	N/A	82,300	27,000	93,000	97,700
. Organic	N/A	19,600	36,000	36,000	85,000
. Microbiological	N/A	6,100	-	8,100	8,900

* Figure revised from 1985-86 Results report.

Program Outputs

The wastewater discharges to watercourses of 13 industrial sectors are evaluated relative to Ministry objectives. The 13 industrial sectors include:

- Iron and Steel Mills,
- Pulp and Paper Mills,
- Petroleum Refining,
- Metal Mining,
- Non-Ferrous Smelting and Refining,
- Fish Products Industry,
- Plastics and Synthetic Resins Manufacturing,
- Industrial Chemicals Manufacturing,
- Abrasives Manufacturing,
- Automotive Manufacturing,
- Meat Processing,
- Poultry Processing, and
- Miscellaneous Manufacturing.

The firms under MBR reporting within each of the industrial sectors are identified in the MBR Technical Appendices.

A facility is identified as being substantially in compliance with a particular environmental objective either if an analysis of an adequately defined data base indicates compliance, or if there is an absence of other information that would be indicative of a non-compliance situation.

The evaluation is not intended to identify short-term failures to meet objectives. Therefore, environmental damages and nuisance conditions may still occur when facilities are in "substantial compliance".

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
	9 Sectors	13 Sectors	14 Sectors	13 Sectors	13 Sectors
No. of points* in compliance with existing objectives	226 (76%)	258** (69%)	256 (76%)	276 (74%)	306 (82%)
No. of points not in compliance with existing objectives, but with abatement plans	42 (14%)	76** (20%)	17 (5%)	51 (13%)	11 (3%)

* A point is considered as a single parameter at a single location.

** Figures revised from 1985-86 Results report.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
	9 Sectors	13 Sectors	14 Sectors	13 Sectors	13 Sectors
No. of points not in compliance with existing objectives without abatement plans	16 (5%)	6* (2%)	14 (4%)	4 (1%)	2 (1%)
No. of points without assessments	15 (5%)	34* (9%)	51 (15%)	44 (12%)	52 (14%)
	299	374*	338	375	371
No. of convictions obtained related to charges laid	N/A	8	N/A	N/A	N/A

Program Effects

The figures below enumerate the tertiary watersheds affected by direct industrial discharges. Detailed statistics on the 144 tertiary watersheds in the Province are given in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds affected by direct industrial discharges:					
. Surface Water	36 (25%)	39 (27%)	35 (24%)	39 (27%)	39 (27%)
. Groundwater	3 (2%)	3 (2%)	0 (0%)	3 (2%)	3 (2%)

* Figures revised from 1985-86 Results report.

The environmental effects resulting from direct industrial discharges include:

- reduced in-stream oxygen levels;
- nutrient enrichment, excessive aquatic growth and reduced aesthetics;
- bacterial or viral contamination;
- destruction of fish habitat, fish toxicity and fish contamination; and
- contamination of terrestrial vegetation and crops.

Localized impacts in the tertiary watersheds receiving direct industrial discharges are summarized below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with localized areas unsuitable for drinking water supply:					
. Surface Water	6	6	6	6	6
. Groundwater	1	1	1	1	1
No. of watersheds with areas unsuitable for contact recreation	7	8	7	8	8
No. of watersheds with areas of reduced amenity for non-contact recreation	12	15	12	15	15
No. of watersheds with areas of poor quality or reduced fishing	33	39	33	39	39
No. of watersheds with downstream damages to special or unique features	6	6	6	6	6
No. of watersheds with areas unsuitable for livestock watering	0	0	0	0	0
No. of watersheds with other impacts	1	1	1	1	1

In 1985-86, remedial measures or studies were being undertaken in 36 watersheds with water quality problems resulting from industrial discharges.

The MBR Technical Appendices also provide water quality data for each of the 11 secondary watersheds in the Province. The indicators of water quality used are:

- historical trends at water quality monitoring stations;
- recent changes at water quality monitoring stations in criteria exceedences of dissolved oxygen, total phosphorus, fecal coliforms, un-ionized ammonia, iron, and phenols; and
- water quality data for dissolved oxygen, total phosphorus, fecal coliforms, un-ionized ammonia, iron, and phenols.

EFFICIENCY — Indicators not developed

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of industrial points in compliance as a % of total no. of points assessed	80%	76%*	89%	83%	96%
No. of industrial points not in compliance but with abatement plans as a % of the total no. of points not in compliance	72%	93%*	55%	93%	85%

* Figures revised from 1985-86 Results report.

(2) COMMERCIAL MARINA POINT SOURCE DISCHARGES

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of commercial marinas in Ontario	363	434*	368	441	440

MAGNITUDE OF DISCHARGES — Data base not developed

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of inspections under E.P. Act Reg. 310, of commercial marinas for pump-out facilities	70	320*	261	317	320
No. of violations of Reg. 310 by commercial marinas	2	6	N/A	24	N/A
No. of corrective actions undertaken without prosecution	3	6*	N/A	24	N/A
No. of convictions obtained	0	0	0	0	N/A

Program Outputs — Indicators not developed

Program Effects — Indicators not developed

* Figures revised from 1985-86 Results report.

EFFICIENCY

Operational Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of corrective actions and convictions obtained as a % of the no. of violations of Reg. 310	N/A	100%	N/A	100%	N/A

EFFECTIVENESS — Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	7,117	8,350	23,386	22,436	24,953
. Person-Years	133	148	165	171	179
. Revenue ($000s)	0	999	400	138	6

MBR PROJECT ON THE MANAGEMENT OF NON-POINT SOURCES OF WATER POLLUTION

OBJECTIVE

To manage non-point sources of urban and agricultural drainage and wastewater discharges from pleasure boats in Ontario in order to prevent adverse effects on human health and well-being and on the natural environment.

DESCRIPTION

The major non-point sources of water pollution are from urban and agricultural drainage. Regulatory capabilities equivalent to those which the Province has over major point sources are not appropriate for non-point sources either for technical or for socio-economic reasons.

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to prosecutions for spills and the review of non-point source water pollution control policies,
- the person-years and budget of the Water Resources Branch related to the development of policies for urban and stormwater runoff and agricultural pollution control and Great Lakes water quality monitoring,
- the person-years and budget of the Laboratory Services Branch related to the analysis of water samples from areas affected by non-point sources of water pollution,
- the person-years and budget of the Hazardous Contaminants Branch related to the development of water quality objectives for recreational water uses,
- the person-years and budgets of the Regions related to the maintenance of the water quality monitoring network and the collection of samples in areas affected by non-point sources of water pollution, the investigation of Regional water quality problems resulting from non-point source pollution, the inspection of pleasure boats for toilets, storage equipment and sewage discharges, and the administration of demonstration projects to reduce agricultural pollution,

- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to stormwater sewer approvals and the administration and co-ordination of boat and marina inspections, and

- the person-years and budget of the Project Engineering Branch related to the development of stormwater sewer policy.

(1) GENERAL

SCOPE

Urban areas, farms and pleasure boats in Ontario.

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of laboratory analyses conducted on samples related to non-point sources of water pollution					
. Inorganic	N/A	343,100	242,000	335,200	314,800
. Organic	N/A	120,400	162,000	162,400	160,400
. Microbiological	N/A	42,100	20,000	38,500	41,000

(2) URBAN RUNOFF AND STORMWATER MANAGEMENT

SCOPE

All urban municipalities.

MAGNITUDE OF DISCHARGES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Discharges* of suspended solids, oxygen demand and total phosphorus to Great Lakes (Mg/d)**	270	270	270	270	270
% of non-point discharges to Great Lakes resulting from:					
. Combined Sewer Overflows	22%	22%	22%	22%	22%
. Urban Runoff	78%	78%	78%	78%	78%

RESULTS

Operational Outputs

In Toronto, investigations of river and waterfront degradation from urban stormwater discharges and combined sewer overflows are under way. Particular emphasis has been placed on the Humber River and the Don River. Expected results include a cost-effective management plan for non-point source pollution, including heavy metals. The management plan for the Humber River watershed was released in the summer of 1986. Field investigations of the Don River watershed are under way.

In St. Catharines, preliminary investigations have identified stormwater discharges and combined sewer overflows as major contributors to river and beach degradation. A study developing a comprehensive pollution control plan is under way and some abatement actions have been initiated.

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* Estimates derived from PLUARG investigations of selected municipalities. Figures were revised from 1985-86 Results and 1986-87 Planned Results reports.

** 1 Mg = 1 tonne.

As part of the Upper Great Lakes Connecting Channel Studies, projects are under way in Windsor, Sarnia and Sault Ste. Marie to estimate the combined sewer overflow contributions from those cities. Emphasis is on toxic contaminants. The results will be used together with other information to determine needs for future pollution control measures for the connecting channels.

The provincial urban drainage management program developed by the Urban Drainage Implementation Committee is under review by the Ontario Government. The program is intended for control of local flooding, pollution and erosion problems resulting from urban drainage.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of projects conducted on inland recreational lakes.	N/A	3	7	4	5
No. of chemical compounds assessed for ambient water quality standard setting purposes:					
. Reviewed	1	23	0	12	50
. Approved		17		20	
No. of scientific criteria documents completed.	1	0	0	1	4

Program Outputs

Indicators not developed

Program Effects

The figures below enumerate the tertiary watersheds affected by urban runoff and stormwater discharges. Detailed statistics on the 144 tertiary watersheds in the Province are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds affected by urban runoff/stormwater discharges:					
. Surface Water	22 (15%)	24 (17%)	21 (15%)	24 (17%)	24 (17%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

The environmental effects resulting from urban runoff and stormwater discharges include:

- reduced in-stream oxygen levels;
- nutrient enrichment, excessive aquatic growth, and reduced aesthetics;
- bacterial or viral contamination;
- water and sediment quality degradation; and
- destruction of fish habitat.

Localized downstream impacts in the tertiary watersheds receiving urban runoff and stormwater discharges are summarized below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with localized areas unsuitable for drinking water supply	1	1	1	1	1
No. of watersheds with localized areas requiring high water treatment costs	1	1	1	1	1
No. of watersheds with areas unsuitable for contact recreation	16	21	16	21	21

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with areas of reduced amenity for non-contact recreation	1	1	1	1	1
No. of watersheds with areas of poor quality or reduced fishing	12	14	12	14	14
No. of watersheds with other impacts	0	0	0	0	0

Studies or remedial measures were under way in 16 watersheds to remedy problems associated with urban runoff/stormwater discharges in 1985-86.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

(3) AGRICULTURAL RUNOFF

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of farms (approx.)	82,400	82,200	82,200	81,500	81,000

Magnitude of Discharges

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Discharges of suspended solids and total phosphorus to Great Lakes (Mg/d)	2,900	2,900*	2,900	2,900	2,900

RESULTS

Operational Outputs

In Lake Simcoe, phosphorus loadings from agricultural runoff were investigated with the aid of monitoring and sampling stations placed at the mouths of the Holland, Black and Beaverton Rivers and Pefferlaw Brook. A final report was released in the fall 1985 which recommends measures for reducing phosphorus loadings from agricultural sources.

An Upper Humber River watershed study was carried out by the Metropolitan Toronto and Region Conservation Authority with grants paid by MOE. The study assessed non-point sources of water pollution in the watershed and recommends control options. The final report will be released in 1987.

In the Holiday/Missouri Creek watershed, a modelling study of the fate and pathways of atrazine is under way which will be used in assessing environmental fate of other pesticides and industrial chemicals.

Under the Provincial Beaches Program, Conservation Authorities are being funded with MOE grants to undertake local soil conservation activities in seven priority watersheds in 1986-87 and 1987-88.

Six Lake Erie watersheds will be monitored for phosphorus in 1987-88 and 1988-89 under the Lake Erie Phosphorus Management Plan.

Program Outputs

Indicators not developed

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* Figure revised from 1985-86 Results report.

Program Effects

As a result of activities and publicity surrounding agricultural runoff pollution problems in Lake Simcoe, Rondeau Bay, the Thames and other southwestern Ontario rivers, farmers are becoming more aware of the needs to control agricultural runoff and erosion. A gradual improvement may be expected from future voluntary actions taken by farmers to control agricultural runoff.

The figures below indicate the tertiary watersheds affected by agricultural runoff. Detailed statistics on the 144 tertiary watersheds in the Province are given in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds affected by agricultural runoff:					
. Surface Water	32 (22%)	34 (24%)	32 (22%)	34 (24%)	34 (24%)
. Groundwater	13 (9%)	14 (10%)	13 (9%)	14 (10%)	14 (10%)

The environmental effects resulting from agricultural runoff include:

- reduced in-stream oxygen levels;
- nutrient enrichment, excessive aquatic growth and reduced aesthetics;
- bacterial or viral contamination;
- pesticides and herbicides contamination; and
- destruction of fish habitat.

During 1985-86, 24 communal groundwater supplies or private wells were impaired by agricultural fertilizers or manure. Nineteen problems were resolved during the year.

Localized impacts in the tertiary watersheds receiving agricultural runoff are summarized below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with localized areas unsuitable for drinking water supply:					
. Surface Water	0	0	0	0	0
. Groundwater	12	14	12	14	14
No. of watersheds with areas of high water treatment costs:					
. Surface Water	6	6	6	6	6
. Groundwater	11	12	11	12	12
No. of watersheds with areas unsuitable for contact recreation	8	7	8	7	7
No. of watersheds with areas of reduced amenity for non-contact recreation	10	11	10	11	11
No. of watersheds with areas of poor quality or reduced fishing	25	26	25	26	26
No. of watersheds with downstream damages to special or unique features	6	6	6	6	6
No. of watersheds with areas unsuitable for livestock watering	3	3	3	3	3

Studies or remedial measures were under way or completed during 1985-86 in 11 watersheds to remedy groundwater problems associated with agricultural runoff.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

(4) PLEASURE BOAT WASTE DISCHARGES

SCOPE

All pleasure boats equipped with toilets and storage equipment for human excrement.

Magnitude of Discharges — Data not available; discharges believed to be of minor impact.

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of inspections under the Environmental Protection Act Reg. 310, of pleasure boats for toilets, storage equipment and sewage discharges	461	2,456*	1,875	3,152	2,800
No. of violations of Reg. 310 by pleasure boats	16	151*	N/A	263	N/A
No. of corrective actions undertaken without prosecution	3	147*	N/A	263	N/A
No. of convictions obtained	4	4*	N/A	0	N/A

* Figures revised from 1985-86 Results report.

Program Outputs — Indicators not developed

Program Effects — Indicators not developed

EFFICIENCY

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Operational Efficiency					
No. of corrective actions and convictions obtained as a % of the no. of violations of Reg. 310	44%	97%*	N/A	100%	100%

EFFECTIVENESS — Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	8,113	10,449	12,377	12,651	12,440
. Person-years	125	149	140	157	164
. Revenue ($000s)	684	207	400	1,024	712

* Figure revised from 1985-86 Results report.

MBR PROJECT ON THE MANAGEMENT OF TRANSBOUNDARY WATER POLLUTION

OBJECTIVE

To regulate Ontario sources of transboundary water pollution and to advocate and negotiate limits on transboundary pollution from outside of Ontario in order to prevent adverse effects on human health and well-being and on the natural environment.

DESCRIPTION

Transboundary water pollution is assigned to a separate MBR project because of the special management problems it poses. Ministry influence over pollution originating outside of Ontario is limited to participation in the negotiation and implementation of national and international agreements.

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to Ontario's representation at U.S. Federal and State proceedings,
- the person-years and budget of the Office of the A.D.M., Environmental Services Division, related to transboundary water quality issues,
- the person-years and budget of the Water Resources Branch related to the support of international and Federal/Provincial water quality agreements, the assessment of transboundary water pollution, and the assessment of water quality in the Great Lakes,
- the person-years and budget of the Laboratory Services Branch and Regional laboratories involving the analysis of water samples from the Great Lakes,
- the person-years and budget of the Office of the A.D.M., Intergovernmental Relations and Strategic Projects Division related to intergovernmental and transboundary water quality issues,
- the person-years and budget of the Hazardous Contaminants Branch related to the development of water quality objectives and policies and plans for the management of transboundary water pollution,
- the person-years and budget of the Intergovernmental Relations Office related to intergovernmental water quality negotiations,

- the person-years and budget of the Intergovernmental Relations and Strategic Projects Division related to the assessment of sources of pollution on the U.S. side of the Niagara, Detroit, St. Clair and St. Mary's Rivers and Lake St. Clair,

- the person-years and budgets of the Regions related to the investigation of cases of transboundary water pollution affecting Ontario water quality, and

the person-years and budget of the Spills Action Centre related to the development of a co-ordinated, international emergency response capability for dealing with spills on the Great Lakes.

SCOPE

All non-Ontario sources of water pollution in watersheds shared with Ontario.

Sources of water pollution in Ontario directly or indirectly discharging to internationally shared watersheds.

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of laboratory analyses conducted on samples related to the Ministry's Great Lakes Program and International Joint Commission (IJC) commitments:					
. Inorganic	N/A	79,800	115,000	128,600	129,800
. Organic	N/A	71,700	100,000	100,000	100,000
. Microbiological	N/A	11,400	12,000	12,200	12,200

International Initiatives:

1984-85

- Ontario supported the U.S. Environmental Protection Agency's (EPA) position in court regarding a pre-treatment plan for industries in Niagara Falls, New York.

- The Province supported the New York State Department of Environmental Conservation's (DEC) position for reducing confidentiality requirements during negotiations with Occidental Chemical (Hooker) at the U.S. Federal District Court in Buffalo.

1985-86

- In 1985-86, Ontario continued its ongoing monitoring of discharges from industries and waste disposal sites along the Niagara River and also monitored industrial discharges from Massena, New York which contribute to PCB contamination in Lake St. Francis, Quebec, and occasionally in Ontario waters.

- Ontario participated in the Upper Great Lakes Connecting Channels Study with the Canadian, U.S. and Michigan governments. Data were provided to joint projects/investigations.

- Ontario participated with the U.S. EPA, New York State DEC and Environment Canada in negotiating a four-party agreement to monitor and control the input of toxic substances into the Niagara River.

- An agreement between Ontario and SCA Chemical Waste Management in New York State was renegotiated regarding a monitoring program for a hazardous waste landfill. The Province will receive monitoring results.

- Ontario received party status to participate in a public hearing on the issuance of the discharge permit for the Niagara Falls, New York wastewater treatment plant. The Province provided technical support to the U.S. EPA's position in U.S. Federal District Court to prevent the reduction of the carbon use at the wastewater treatment plant.

- Ontario maintained a close watch on a U.S. Federal/New York State lawsuit against Occidental Chemical for site remediation at Hyde Park. The Province also submitted reports regarding the remediation proposals. Ontario submitted technical reports addressing the control of the Gorge Face Seeps from which the contaminants flow to the Niagara River.

- The Province participated with the U.S. EPA, New York State and Occidental Chemical in developing a study of dioxin in the environment, especially in fish and sediments in the Niagara River and Lake Ontario. Water samples and analytical results for the Falls Street tunnel discharge to the Niagara River were shared among jurisdictions.

- Ontario was represented on the Water Quality Board of the IJC and the Board's Priorities Committee, coordinated responses on Great Lakes issues, and negotiated agreements on international and interprovincial water quality issues.

1986-87

- The Province is preparing a Memorandum of Understanding with Quebec and the Council of Great Lakes Governors on the management of toxic substances in the Great Lakes.

- The Province is preparing an Environmental Accord with Michigan.

- The Province is continuing to liaise with federal officials on matters related to the Canada-Ontario Agreement Respecting Great Lakes Water Quality.

- The Province is preparing assessments of the CECOS Necco Park, Niagara County, Hyde Park and 102nd Street landfill sites in New York State.

- The Province presented court submissions in New York State concerning the remediations of the S-Area and Hyde Park landfills.

Provincial Initiatives:

1984-85

- The Province initiated the development and testing of a $1 million pilot scale granular activated carbon treatment system at the Niagara Falls, Ontario water treatment plant and prepared reports on municipal, industrial and landfill site discharges to the Niagara River. In 1984-85 and 1985-86 the Province continued its monitoring of trace organics in raw and treated drinking water in water treatment plants throughout the Niagara area.

- The Province undertook the compilation and evaluation of Detroit, St. Clair and St. Mary's Rivers water quality information and the determination of abatement requirements, through its participation in the Upper Great Lakes Connecting Channel Study.

1985-86

- The Province continued its monitoring of municipal, industrial and landfill sources of toxic contaminants in the Niagara River area and, in conjunction with Environment Canada, released a detailed report on all Ontario point source discharges identified in the Niagara River Toxics Committee (NRTC) report.

- Reports on two of the five Ontario landfills identified in the NRTC report were released: these identified the site settings and the impacts of the sites on water quality.

- The Province participated with Environment Canada in a test drilling and groundwater quality monitoring program on Navy Island. The Island is the closest point in Canada to Occidental Chemical's "S" area.

- Ontario completed Phases I and II of an investigation into the potential contamination of the fresh water aquifer in Lambton County by deep well disposal operations.

- The Province completed inventories of waste disposal operations, industrial dischargers, and, loadings from combined and storm sewers discharging to the Upper Great Lakes connecting channels.

- An air photo search was undertaken to review historical land use development on the shorelines of the St. Mary's and St. Clair Rivers.

- An investigation was undertaken to determine the source of 2,3,7,8 TCDD (dioxin) found in fish in Rainy River.

1986-87

- The Province commenced Phases III, IV and V investigations into the potential contamination of the fresh water aquifer in Lambton County by deep well disposal operations.

- The Province assessed the waste disposal sites identified in previous inventories to determine the priorities for remedial work and for monitoring.

- The Province is developing a plan for additional monitoring of the Algoma Steel slag disposal site.

- An air photo surveillance of industrial complexes and shorelines in Sarnia, Windsor and Sault Ste. Marie was undertaken to identify potential areas of unidentified point source discharges or leachate discharges.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of reviews of New York State Pollution Discharge Elimination System (SPDES) permits for municipal and industrial discharges	4	8	6	12	18
No. of reviews of Michigan SPDES permits for municipal and industrial discharges	0	2	2	0	0
No. of evaluations of Ontario municipal and industrial discharges to the Niagara River watershed	35	35	35	35	35
No. of evaluations of Ontario municipal and industrial discharges to the watersheds of the Detroit, St. Clair and St. Mary's Rivers	0	0	15	28	71
No. of evaluations of Ontario landfill sites in the Niagara River watershed	7	8	17	18	18
No. of evaluations of Ontario landfill sites in the watersheds of the Detroit, St. Clair and St. Mary's Rivers	0	3	2	41	3
No. of evaluations of New York State landfill sites in the Niagara River watershed	7	13	16	12	16
No. of evaluations of Michigan State landfill sites in the watersheds of the Detroit, St. Clair and St. Mary's Rivers.	Data base not developed				

Program Outputs

International Initiatives:

1984-85

- Ontario and New York State signed a Memorandum of Understanding for the transfer of information regarding transboundary pollution.

1985-86

- Party status for Ontario at hearings on the Niagara Falls, New York wastewater treatment plant ensured that stringent limits on discharges were placed on the plant.

- As a result of a Court agreement, the modifications to the monitoring at the SCA Chemical Waste Management site in New York State have resulted in an improved overall monitoring program for this facility.

- Ontario's reports on U.S. hazardous waste landfill sites provide government agencies and environmental groups with information to support enforcement and intervention actions.

- The collection and interpretation of data on point/non-point sources, groundwater and waste sites support the establishment of sound objectives for enforcement by all jurisdictions involved in international boundary waters of the Upper Great Lakes connecting channels.

1986-87

- The Niagara River Toxics Management Plan between Ontario, the New York State DEC, Environment Canada and the U.S. EPA was signed.

- The Province's interventions in the New York State hearings regarding the S-Area and Hyde Park landfill remediations were unsuccessful as the courts did not accept Ontario's proposed approaches.

Provincial Initiatives:

1984-85

- Atlas Steel in Welland completed a waste management master plan which included a solidification process to eliminate the discharge of wastewater to the Welland River.

1985-86

- Project studies influenced design decisions in the upgrading of the Niagara Falls, Ontario sewage treatment plant.
- MOE provided assistance to an environmental group for a study on excavation as a remediation technology for hazardous waste landfills.
- MOE and Environment Canada prepared a detailed report on the quality of the drinking water in the Niagara Falls area.
- Data collected as part of the St. Clair/Detroit/St. Mary's Rivers Improvement Project provided useful information in the preparation of Federal/Provincial action plans directed to the St. Clair River pollution problem in the fall/winter of 1985-86.

Program Effects

Tangible changes in international negotiation procedures, information flows and knowledge of the extent and sources of contamination, together with specific improvements to discharge permits and litigation documents have occurred. There is also an increased awareness in the U.S., at both Federal and State levels, that Ontario has real concerns about the water quality in the Niagara, Detroit, St. Clair and St. Mary's Rivers and is determined to protect its environmental interests.

The watersheds affected by transboundary water pollution have been enumerated below. Detailed water quality information on the 144 tertiary watersheds in the Province is provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with water pollution problems caused by specific non-Ontario sources:					
. Surface Water	6 (4%)	6 (4%)	6 (4%)	6 (4%)	6 (4%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

The environmental effects resulting from transboundary water pollution from non-Ontario sources include:

- fish contamination, destruction of fish habitat, and toxicity to fish;
- reduced in-stream oxygen levels;
- excessive aquatic growth and reduced aesthetics; and
- bacterial or viral contamination.

Localized impacts in the tertiary watersheds receiving transboundary water pollution from specific non-Ontario sources are summarized below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with localized areas with high water treatment costs	1	1	1	1	1
No. of watersheds with areas unsuitable for contact recreation	2	2	2	2	2
No. of watersheds with areas of reduced amenity for non-contact recreation	0	0	0	0	0

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with areas of poor quality or reduced fishing	6	6	6	6	6
No. of watersheds with areas unsuitable for livestock watering	0	0	0	0	0

In 1985-86, studies or remedial measures were undertaken in three watersheds to resolve problems associated with transboundary water pollution.

EFFICIENCY Indicators not developed

EFFECTIVENESS Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	2,679	2,985	2,942	4,223	4,869
. Person-Years	49	52	46	47	51
. Revenue ($000s)	342	104	400	511	355

MBR PROJECT ON THE MANAGEMENT OF POINT SOURCES OF AIR POLLUTION

OBJECTIVE

To manage the emissions from point sources of air pollution in Ontario at quantities and rates that will protect the natural environment, human health and well-being.

DESCRIPTION

The resources assigned to this MBR project include:

- the budget of the Policy and Planning Branch related to the provision of research funding concerning air emissions and their effects,
- the person-years and budget of the Legal Services Branch related to the legal actions against industries concerning air pollution,
- the person-years and budget of the Office of the A.D.M., Environmental Services Division, related to point source air pollution issues,
- the person-years and budget of the Air Resources Branch related to the development of policies and plans for the control of air emissions, the evaluation of industrial technologies, the provision of assistance to the Regions on air pollution issues, and the maintenance of air quality information systems,
- the person-years and budget of the Water Resources Branch related to deposition of air pollution in water,
- the person-years and budget of the Laboratory Services Branch related to performing air quality tests, and the development of analytical techniques for measuring air pollutants,
- the person-years and budget of the Hazardous Contaminants Branch related to the review or establishment of standards for pollutants emitted to air,
- the person-years and budget of the A.D.M., Operations Division, related to the management of point source air pollution issues,

- the person-years and budget of the Investigations and Enforcement Branch related to investigations and enforcement of sources in non-compliance with air emission criteria,

- the person-years and budgets of the Regions related to the inspection, monitoring and regulation of sources of air pollution, the maintenance of air quality monitoring equipment, the response to air pollution events, and the resolution of complaints about air pollution,

- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to the review of applications for Certificates of Approval for industrial air emissions, and

- the person-years and budget of the Spills Action Centre related to the development of emergency response capabilities.

(1) GENERAL

SCOPE

Industrial and incinerator air emission sources

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of laboratory analyses conducted on samples related to point sources of air pollution:					
. Inorganic	N/A	148,200	145,000	149,000	149,400
. Organic	N/A	400	20,000	20,000	20,000

(2) INDUSTRIAL AIR EMISSIONS

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of industrial point sources in Ontario	11,000	11,000	11,000	11,000	11,000
No. of air contaminants of concern (approx.)	100	100	100	100	100
No. of air contaminants under MBR reporting	21	21	21	21	21
No. of industrial facilities with air emissions under MBR reporting	152	132*	186	131	130

MAGNITUDE OF EMISSIONS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total emissions of suspended particulates, sulphur dioxide and nitrogen oxides (Mg/d)**	4,525 (69)***	4,170**** (88)***	4,180 (98)***	4,150 (87)***	3,900 (87)***

* The decrease between 1984-85 and 1985-86 is due to the exclusion of insignificant sources of air pollution from MBR reporting. This figure has been revised from the 1985-86 Results report.

** 1 Mg = 1 tonne.

*** No. of industrial point sources contributing to total emission figures. All major and some very small sources are included.

**** Figure revised from 1985-86 Results report.

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of industrial noise complaints investigated	335	359	N/A	350	N/A
No. of Certificates of Approval issued	507	530	500	716	700
No. of chemicals or compounds assessed for air quality standard setting purposes	N/A	41	N/A	70	50
No. of chemicals assessed for multi-media standard setting purposes	20	16	45	41	25
No. of scientific criteria documents completed	1	0	0	1	4
No. of investigations related to air emission compliance	N/A	23	N/A	110	127
No. of charges laid for sources not in compliance with air emission criteria	N/A	88	N/A	75	86

Scientific Criteria Documents: A program is under way to develop guidelines for the emissions of Polycyclic Aromatic Hydrocarbons (PAHs) with emphasis on coke oven emissions. Another scientific criteria document is being developed concerning arsenic.

Studies of Priority Contaminants: The Air Resources Branch has measured ambient air and soil for lead levels in conjunction with a triministry study of blood lead levels in school children.

Special Surveys: A project is under way to determine odour impacts. The results will be used to promulgate standards.

Program Outputs

The atmospheric emissions of 17 industrial sectors are evaluated relative to Ministry criteria. The 17 industrial sectors include:

- Iron and Steel Mills
- Pulp and Paper Mills
- Petroleum Refining
- Cement Manufacturing
- Metal Mines
- Thermal Generating Stations
- Non-Ferrous Smelting and Refining
- Plastics and Synthetic Resins Manufacturing
- Industrial Chemicals Manufacturing
- Abrasives Manufacturing
- Metal Stamping and Pressing Industries
- Lime Manufacturing
- Automobile Manufacturing
- Meat Processing
- Poultry Processing
- Insulation Materials Manufacturing
- Miscellaneous Manufacturing.

The firms under MBR reporting within each of the industrial sectors are identified in the MBR Technical Appendices.

A facility is identified as being substantially in compliance with a particular environmental criterion if an analysis of an adequately defined data base indicates compliance, or if there is an absence of other information that would be indicative of a non-compliance situation.

The evaluation is not intended to identify short-term failures to meet criteria. Therefore environmental damages and nuisance conditions may still occur when facilities are in "substantial compliance".

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
	12 Sectors	17 Sectors	16 Sectors	17 Sectors	17 Sectors
No. of points* in compliance with existing criteria	232 (80%)	248** (76%)	251 (73%)	249 (78%)	261 (83%)
No. of points not in compliance with existing criteria, but with abatement plans	20 (7%)	24** (8%)	6 (2%)	23 (7%)	6 (2%)

* A point is considered as a single parameter at a single location.
** Figures revised from 1985-86 Results report.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
	12 Sectors	17 Sectors	16 Sectors	17 Sectors	17 Sectors
No. of points not in compliance with existing criteria, and without abatement plans	0 (0%)	0* (0%)	5 (2%)	0 (0%)	1 (0%)
No. of points without assessments	39 (13%)	53* (16%)	80 (23%)	48 (15%)	46 (15%)
	291	325*	342	320	314
No. of convictions obtained related to charges laid	N/A	4	N/A	N/A	N/A

Program Effects

The figures below enumerate the communities with air quality affected by industrial emissions. Air quality statistics for 86 communities in the Province are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of communities with air quality affected by industrial emissions	72** (86%)	72 (84%)	72** (86%)	72 (84%)	72 (84%)

* Figures revised from 1985-86 Results report. The total number of points assessed increased from 1984-85 to 1985-86 because of the addition of five industrial sectors: automobile manufacturing, meat processing, poultry processing, insulation materials manufacturing and miscellaneous manufacturing.

** 84 communities were assessed for air quality for the 1984-85 Results and 1986-87 Planned Results reports.

Industrial emissions primarily contribute:

- suspended particulates and dustfall;
- nitrogen oxides;
- sulphur dioxide;
- total reduced sulphur; and
- hydrocarbons.

In 1985-86, dustfall and particulate emissions from industries were adversely influencing local air quality resulting in structures and material corrosion, soiling, and public complaints in 27 communities. Fifteen communities were experiencing local odours and nuisance effects from sulphur dioxide and total reduced sulphur emissions. Localized areas in three communities were being exposed to industrial hydrocarbons resulting in public concern about possible health effects. In two communities, amines from meat packing plants were causing odours, and in one community (Toronto), lead from secondary smelters was causing soils and health effects. As well, one community (Port Hope) was receiving fluoride and low level radiation emissions which was resulting in vegetation damage, public complaints, and public concern about health effects.

EFFICIENCY — Indicators not developed

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of points in compliance with existing criteria as a % of no. of points assessed	90%	91%	96%	92%	97%
No. of points not in compliance but with abatement plans as a % of the total no. of points not in compliance	100%	100%*	55%	100%	86%

* Figure revised from 1985-86 Results report.

(3) INCINERATOR AIR EMISSIONS

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of municipal waste incinerators under MBR reporting	5	5	4	5	5
No. of municipal sewage sludge incinerators under MBR reporting	5	5	5	5	5
No. of special waste incinerators under MBR reporting*	2	2	2	2	2
No. of Energy-From-Waste (EFW) incinerators under MBR reporting	1	1	1	1	1
No. of pathological waste incinerators under MBR reporting** (approx.)	137	137	240	137	140

MAGNITUDE OF EMISSIONS — Indicators not developed

RESULTS

Operational Outputs

A policy on biomedical waste has been updated and new guidelines on the handling and disposal of such waste have been widely distributed.

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* "Special Wastes" include liquid and solid hazardous wastes and most liquid industrial wastes. For more information see the MBR Project on the Management of Special Wastes.

** Four of the pathological waste incinerators also accept some quantities of special wastes.

Program Outputs **(Data base is under development and is incomplete.)**

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of points* in compliance with existing criteria	6	6**	11	8	12
No. of points not in compliance with existing criteria, but with abatement plans	5	3**	1	1	0
No. of points not in compliance with existing criteria, and without abatement plans	0	0	0	0	0
No. of points without assessments	5	6**	3	5	2
	16	15**	15	14	14

Program Effects

The communities with air quality affected by incinerator emissions are enumerated below. Air quality statistics for 86 communities in Ontario are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of communities with air quality affected by incinerator emissions	3*** (4%)	3 (4%)	3*** (4%)	3 (4%)	3 (4%)

* A point is considered as a single parameter at a single location.
** Figures revised from 1985-86 Results report.
*** 84 communities were assessed for air quality for the 1984-85 Results and 1986-87 Planned Results reports.

Incinerator emissions primarily contribute:

- suspended particulates;
- nitrogen oxides;
- sulphur dioxide; and
- hydrocarbons.

There has been public concern expressed about emissions of exotic contaminants from incinerators. Older pathological waste incinerators are not able to satisfactorily incinerate waste compositions containing high ratios of plastics and thus the potential exists for undesirable emissions if loadings are not strictly controlled. In 1985-86, no localized adverse air quality effects were being reported as resulting from incinerator emissions.

EFFICIENCY Indicators not developed

EFFECTIVENESS Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	11,174	13,005	12,410	17,899	16,568
. Person-Years	187	207	198	201	207

MBR PROJECT ON THE MANAGEMENT OF NON-POINT SOURCES OF AIR POLLUTION

OBJECTIVE

To manage non-point sources of air pollution in Ontario in order to prevent adverse effects on human health and well-being and on the natural environment.

DESCRIPTION

Non-point sources of air pollution are inherently more complex to control than point sources and pose special management problems. Regulatory capabilities equivalent to those that the Province has over major point sources are not appropriate either for technical or for socio-economic reasons. The major non-point sources of air pollution are automobiles, residential space heating and construction. As well, community noise is considered to be a non-point pollution source.

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to prosecutions of vehicle owners and garages for failure to comply with regulations governing vehicle emissions,
- the person-years and budget of the Office of the A.D.M., Environmental Services Division, related to the management of non-point source air pollution issues,
- the person-years and budget of the Air Resources Branch related to the assessment of the significance of non-point sources of pollution on air quality, the administration of the vehicle emissions control program, and the maintenance of an air quality information system,
- the person-years and budget of the Laboratory Services Branch related to the analysis of air samples in communities affected by non-point sources of air pollution,
- the person-years and budget of the Hazardous Contaminants Branch related to the development of air quality standards, and policies and plans for the management of non-point sources of air pollution,
- the person-years and budget of the Investigations and Enforcement Branch related to investigations and enforcement of sources in non-compliance with air emission criteria,

- the person-years and budgets of the Regions related to the maintenance of air quality instrumentation, the assessment of the impact of non-point emissions on local air quality and the implementation of municipal noise by-laws, and

- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to the assessment of noise sources, the provision of noise expertise to the Regions, and the development of noise policies, plans and guidelines.

(1) GENERAL

SCOPE

Motor vehicles, residential space heating, construction and other urban activity, and noise from non-point sources

RESULTS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Operational Outputs					
No. of laboratory analyses of samples related to non-point sources of air pollution:					
. Inorganic	N/A	59,000	59,000	59,000	59,000
. Organic	N/A	4,000	4,000	4,000	4,000

(2) TRANSPORTATION - VEHICLE EMISSIONS

SCOPE

Vehicles are responsible for 91% of the carbon monoxide, 62% of the hydrocarbons, and 35% of the nitrogen oxides from all sources in Ontario.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of registered motor vehicles (millions)	4.34	4.97	4.42	5.01	5.12

MAGNITUDE OF EMISSIONS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Emissions of sulphur dioxide, nitrogen oxides, carbon monoxide, hydrocarbons and particulates (Mg/d)	10,400	10,700	10,600	10,700	10,800

RESULTS

Operational Outputs

The Ministry's "Vehicle Emission Control Program" consists of vehicle spotchecks, investigations of complaints regarding purchased vehicles lacking emission controls and assessments of vehicle mass emissions data. Vehicle spotchecking is restricted to the Toronto area but investigations of complaints occur province-wide.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of vehicle emissions spotchecks	909	542	1,200	550	550
No. of inspections of emission control systems at used car dealerships	3,533	1,544	3,800	1,600	1,600
No. of charges laid related to emission standards compliance	N/A	31	N/A	N/A	N/A

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% of cars violating vehicle emission standards (est.)	52%	55%	46%	50%	47%
% of violations concerning the installation of emission control systems (est.)	7%	11%	5%	10%	8%
No. of convictions obtained related to charges laid	N/A	1	N/A	N/A	N/A

Program Effects

The Ministry's "Vehicle Emissions Control Program" covers less than 0.1% of Ontario's vehicle population. As a result, the program neither achieves the decrease in emissions and increase in fuel economy possible from proper automotive maintenance, nor makes the majority of car owners very conscious of the pollution and energy aspects of automobile emission control maintenance.

The communities with air quality affected by vehicle emissions are enumerated below. Air quality statistics for 86 communities in the Province are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of communities with air quality affected by vehicle emissions	42* (50%)	41 (48%)	43* (51%)	41 (48%)	41 (48%)

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

* 84 communities were assessed for air quality for the 1984-85 Results and 1986-87 Planned Results reports.

(3) RESIDENTIAL SPACE HEATING

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total housing stock (millions of units) (est.)	3.50	3.80	3.62	4.10	4.40

MAGNITUDE OF EMISSIONS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Emissions of sulphur dioxide, nitrogen oxides, carbon monoxide, hydrocarbons and particulates (Mg/d)	741	746	687	747	747

RESULTS

Operational Outputs

There are currently no Ministry controls specific to residential space heating. Involvement is limited to the investigation of complaints concerning visible emissions from apartment building heating systems.

Program Effects

The communities affected by space heating emissions are enumerated below. Air quality statistics for 86 communities in the Province are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of communities with air quality affected by space heating emissions	27* (32%)	27 (31%)	28* (33%)	27 (31%)	27 (31%)

In 1985-86, no localized effects were being reported in any of the communities where space heating emissions influence air quality.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

(4) CONSTRUCTION AND URBAN ACTIVITY

SCOPE — All construction and urban activity

RESULTS

Operational Outputs

These sources are not controlled. Several demonstration projects are under way to determine the feasibility of reducing urban dust.

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* 84 communities were assessed for air quality for the 1984-85 Results and 1986-87 Planned Results reports.

Program Effects

The communities with air quality affected by construction are enumerated below. Air quality statistics for 86 communities in the Province are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of communities with air quality affected by construction and urban activity	24* (29%)	26 (30%)	25* (30%)	26 (30%)	26 (30%)

Construction and urban activity primarily contribute dustfall and suspended particulates. No localized effects are being reported as a result of urban and construction activity.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

(5) COMMUNITY NOISE

SCOPE — All urban municipalities

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of noise complaints investigated:					
. Air Conditioner and Heat Pump	45 (21%)	46 (18%)	30 (14%)	60 (21%)	N/A

* 84 communities were assessed for air quality for the 1984-85 Results and 1986-87 Planned Results reports.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Public Nuisance	14 (6%)	29 (11%)	20 (10%)	35 (12%)	N/A
. Vehicle Noise	28 (13%)	28 (11%)	20 (10%)	35 (12%)	N/A
. Vibration	34 (16%)	29 (11%)	30 (14%)	32 (11%)	N/A
. Railway	4 (2%)	26 (10%)	5 (2%)	10 (3%)	N/A
. Blasting	35 (16%)	48 (19%)	45 (21%)	60 (21%)	N/A
. Municipal By-Law	33 (15%)	27 (11%)	35 (17%)	27 (9%)	N/A
. Other	25 (11%)	23 (9%)	25 (12%)	30 (11%)	N/A
	218	256	210	289	N/A
No. of plan reviews and reviews of projects with a noise/vibration abatement component	208	212	200	200	200
No. of municipal noise by-laws approved	N/A	9	N/A	25	25
No. of charges laid related to compliance with noise requirements	N/A	18	8	7	8

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of municipalities with noise control by-laws	88	92	100	108	120
No. of projects with voluntary noise/vibration controls undertaken following Ministry review	11	16	20	20	20
No. of Municipal Noise Control Officers receiving training and certification	15	0	10	30	30
No. of convictions obtained related to charges laid	N/A	5	N/A	N/A	N/A

Program Effects

Noise and vibration cause psychological, social and possibly health related problems and can result in reduced recreational amenity and decreased property values. Data are unavailable at this time on the occurrence of such problems in Ontario.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Expenditures ($000s)	3,519	3,603	3,113	4,552	4,153
Person-Years	60	62	58	56	57

MBR PROJECT ON THE MANAGEMENT OF TRANSBOUNDARY AIR POLLUTION AND ATMOSPHERIC DEPOSITION

OBJECTIVE

To regulate Ontario sources contributing to transboundary air pollution and to advocate and negotiate limits to reduce the deposition in Ontario of transboundary air pollution from outside the Province in order to prevent adverse effects on human health and well-being and on the natural environment.

DESCRIPTION

Transboundary air pollution is assigned to a separate MBR project because of the special management problems it poses. Ministry control over transboundary pollution is limited to participation in negotiating and implementing national and international agreements. At the present time, efforts are primarily directed towards assessing the effects of transboundary air pollution.

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to Ontario's representation at Federal or U.S. proceedings on transboundary air pollution issues,
- the person-years and budget of the Office of the A.D.M., Environmental Services Division, related to long-range air pollution issues and acid deposition,
- the person-years and budget of the Air Resources Branch related to the Acid Precipitation in Ontario Study (APIOS) and to the investigation of other long range air pollution problems including ozone and organics,
- the person-years and budget of the Water Resources Branch related to research on the aquatic effects of acid deposition,
- the person-years and budget of the Laboratory Services Branch involving the analysis of APIOS samples,
- the person-years and budget of the Office of the A.D.M., Intergovernmental Relations and Strategic Projects Division and the Acid Precipitation Office related to the coordination of intergovernmental air quality issues,

- the person-years and budget of the Hazardous Contaminants Branch related to the development of air quality standards, and

- the person-years and budgets of the Regions related to APIOS and the investigation of cases of transboundary air pollution affecting Ontario.

SCOPE

Sources of sulphur and nitrogen emissions external to Ontario, primarily in the eastern United States and in the Provinces of Manitoba and Quebec, are of concern because of the potential damages acid deposition may cause in Ontario.

Sources, particularly in the northeastern United States, of hydrocarbons and nitrogen oxides have adverse effects on ozone levels. Transboundary sources of toxic organics including PCBs, polycyclic aromatic hydrocarobns (PAHs), pesticides and furans are also of concern.

Major sources of sulphur and nitrogen emissions in Ontario have the potential to cause impacts beyond Ontario.

Significant Sources

Emissions from thermal power generating stations, refineries, non-ferrous smelters and vehicles have impacts on Ontario's airsheds, watersheds, and terrestrial environment.

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of inorganic laboratory analyses conducted on samples related to APIOS	N/A	357,400	386,000	390,200	389,600

International Initiatives:

- In 1984-85, Ontario intervened before the Michigan Air Pollution Control Commission in opposition to the Consumers Power Company's second request to delay bringing its J.H. Campbell Power Plant into compliance with the Michigan "1% or equivalent sulphur in fuel" rule.

- In 1984-85, Ontario, Environment Canada, the United States, Norway and Sweden established an informal Calibrated Watershed Modelling Group to determine the effects of acid precipitation on watersheds and to develop target loadings for preventing damage.

- In 1985-86, Ontario's position was communicated to the U.S. Environmental Protection Agency (EPA) opposing its proposed approval of a request by the State of Michigan to delay bringing its J.H. Campbell Power Plant into compliance with the Michigan "1% or equivalent sulphur in fuel" rule.

- Ontario is represented on the United Nations Economic Commission for Europe (ECE) Committee on Effects of Sulphur on the Environment. The ECE is promoting a 30% reduction in sulphur dioxide emissions by 1993 for its 18 member countries, including Canada.

- Ontario is co-operating with Environment Canada and Germany in the development of the Eulerian Model and the Atmospheric Deposition and Oxidants Model which will define source/receptor relationships. The Eulerian Model is being run on the Canadian Meteorological Commission's computer in Laval.

- Ontario is co-operating with the U.S. EPA in the development and design of a major field study to provide data for validating Eulerian long range transport models, is assisting other agencies in developing a North American deposition data base, and is participating in the design of the U.S. National Acid Precipitation Assessment Program.

- Ontario is participating in an inter-laboratory study with five U.S. laboratories to develop standardized techniques and procedures and has participated with the U.S. in a methodology study on the effects of acidic precipitation on crops.

Provincial Initiatives:

Data collected during field studies in 1985-86 in southwestern Ontario are being analyzed to determine the contributions of Ontario and transboundary sources to ambient levels of ozone. Results of the Sarnia oxidants study were interpreted and reported.

Through APIOS, a wide range of activities that were initiated in prior years were continued in 1985-86 as outlined below.

- Atmospheric Processes Studies: Emission inventorying in Ontario and North America, long-term and short-term deposition modelling, deposition monitoring and trajectory analysis studies are under way.

- Aquatic Effects Studies: Eight lakes and 32 watersheds are being studied in detail in the Muskoka-Haliburton area. Results from these studies will give accurate rates of change of water quality, can be used to determine "acceptable" acid loadings, and will serve as long-term monitors of the effectiveness of abatement programs. A project to determine the sources of mercury to the study lakes has been initiated. A trace metal sampling program has been initiated to determine the major sources and sinks of cadmium, lead and zinc. Studies on stream invertebrates in Algonquin Park continued through the 1985-86 field season. Sensitivity of native fish to pH depressions in streams and lakes has been assessed over a five year period (1981-86).

- Terrestrial Effects Studies: A baseline survey of soils and vegetation has been completed. Experiments are being conducted to determine the effects of acid deposition and associated air pollutants on commercial crops. A maple decline study continued in 1985-86 to determine the role of acid deposition in this decline. A province-wide hardwood decline study and a dendrochronology study focusing primarily on sugar maples were initiated in 1985-86. A lichen and moss study was concluded in 1985-86.

- Biogeochemistry Studies: In 1985-86, monitoring was undertaken at four sites located in three deposition area categories: high, moderate, low. Field studies were developed to address the effect of acid deposition on natural mineral weathering rates of bedrock and till on the Precambrian Shield and on aluminum and sulphur cycles.

- Socio-Economic Investigations: Studies are being conducted to determine costs of abatement and mitigation measures in order to develop an overall abatement program. Models have been developed which estimate the potential biological and economic effects of acid precipitation.

- Public Relations Initiatives: Initiatives include brochures, fact sheets, open houses, exhibits, tours and films to increase public awareness in Ontario and the U.S. Mini-videotapes are being prepared on different aspects of the acid precipitation problem. Ministry staff were involved in the planning and staging of the International Symposium on Acidic Precipitation which was held in Muskoka in September 1985.

Program Outputs

International Initiatives:

- Ontario's intervention assisted the Michigan Air Pollution Control Commission to order the Detroit Edison Monroe plant and the Consumers Power Company's J.H. Campbell and B.C. Cobb plants to comply with the "1% or equivalent sulphur in fuel" rule by 1985, rather than extend it to 1990 as had been requested by the companies. The Commission subsequently granted a three year extension to the Consumers Power Company for the J.H. Campbell plant.

- Despite Ontario's opposition, the Indiana Air Pollution Control Board permitted an increase of sulphur dioxide emissions by the Clifty Creek plant.

- In 1984-85, the U.S. EPA approved the request by the Indiana Air Pollution Control Board to increase the State enforceable sulphur dioxide emission limits for the Indiana-Michigan Electric Company Breed plant from 6.0 to 9.5 lbs. per million BTUs, despite Ontario's intervention.

- In 1984-85, the Washington, D.C. Court ruled that the U.S. EPA should make a decision on the Section 126 suit filed by New York and Pennsylvania. The U.S. EPA denied the request. However, a U.S. judge subsequently ruled against the U.S. EPA and utilities in favour of a petition filed by seven northeastern states under Section 115 of the U.S. Clean Air Act. The judge requested the U.S. EPA Administrator to develop State Implementation Plan changes that will reduce sulphur dioxide emissions associated with acid precipitation in Canada. Ontario requested status to submit a briefing and to appear at the hearing in support of the plaintiffs. This request was granted and Ontario submitted a written brief in March 1986.

Federal/Provincial Initiatives:

- On March 6, 1984, at a Federal/Provincial Environment Ministers meeting on acid rain in Ottawa, the Canadian and Eastern Provincial governments agreed to proceed with a reinforced sulphur dioxide abatement program, moving from a 25% to a 50% reduction in emissions by 1994 in the hope that the U.S. would join in the near future.

- On February 5, 1985, Federal/Eastern Provincial Environment Ministers agreed on the apportionment by province of sulphur dioxide emissions reductions. Ontario promised to reduce annual sulphur dioxide emissions to 1,030,000 tonnes per year by 1994.

On December 17, 1985, Ontario announced its decision to set annual sulphur dioxide emission levels for Ontario Hydro, Inco, Falconbridge and Algoma Steel at 665,000 tonnes by 1994. Total annual emissions in Ontario will be no more than 885,000 tonnes.

Program Effects

Detailed air quality statistics (for 86 communities) and water quality data (for 144 tertiary watersheds) are provided in the MBR Technical Appendices. Where air quality is affected by long range transport, air emission sources resulting in the long range transport of air pollutants may be internal or external to Ontario. Similarly, both Ontario and non-Ontario emission sources contribute to the atmospheric deposition affecting Ontario watersheds.

The figures below enumerate the communities with air quality affected by long range transport of air pollutants.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of communities with air quality affected by long range transport*	31 (37%)	32 (37%)	33 (39%)	32 (37%)	32 (37%)

For several years, the long range transport of ozone has resulted in vegetation damages and reduced agricultural production in communities in Southern Ontario. As well, one community (Windsor) was being exposed to transboundary sources of particulates and reduced sulphur which caused local odour problems and corrosion of structures and materials.

Experiments on crops exposed to varying levels of acidity in rain have not indicated any detrimental short-term effects on most crop cultivars at current levels of rain acidity.

Surveys of groundwater supplies have indicated a number of corrosive, low pH water supplies, some of which can result in elevated levels of metals in drinking water. The acidity of these supplies was found to be due to naturally occurring carbonic acid.

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* 84 communities were assessed for air quality for the 1984-85 Results and 1986-87 Planned Results reports.

The tertiary watersheds affected by atmospheric deposition are enumerated below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds affected by atmospheric deposition:					
. Surface Water	15 (10%)	15 (10%)	15 (10%)	15 (10%)	15 (10%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

The major aquatic effects resulting from atmospheric deposition are:

. surface water acidification;
. destruction of aquatic ecosystems; and
. fish mortality.

Impacts in the tertiary watersheds affected by atmospheric deposition are summarized below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with poor quality or reduced fishing	11	11	11	11	11
No. of watersheds with damages to special or unique features	2	2	2	2	2

There has been extensive lake sampling as part of APIOS to assess the current chemical (i.e., pH and alkalinity) status of provincial waters being affected by long range transport and atmospheric deposition. The results of these surveys are identified below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of lakes found to be acidified	220 (4%)	244 (4%)	N/A	N/A	N/A
No. of lakes found to be extremely sensitive	789 (15%)	934 (15%)	N/A	N/A	N/A
No. of lakes found to be moderately sensitive	2,043 (38%)	2,312 (38%)	N/A	N/A	N/A
No. of lakes found to be of low sensitivity	921 (17%)	1,031 (17%)	N/A	N/A	N/A
No. of lakes found to be not sensitive	1,368 (26%)	1,542 (26%)	N/A	N/A	N/A
Total no. of lakes surveyed	5,341	6,063	6,263	N/A	N/A

EFFICIENCY

Indicators not developed

EFFECTIVENESS

Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	9,732	9,295	10,073	10,907	10,740
. Person-Years	121	90	106	92	94

MBR PROJECT ON THE MANAGEMENT OF MUNICIPAL WASTES DIRECTED TO LANDFILL

OBJECTIVE

To regulate the development and operation of waste disposal sites in Ontario receiving municipal wastes so as to prevent adverse effects on human health and well-being and on the natural environment.

DESCRIPTION

The resources assigned to this MBR project include:

- transfer payments to municipalities for operational improvements to waste disposal sites and for site closures under the "Waste Site Improvement Program",
- the budget of the Policy and Planning Branch related to waste disposal research,
- the person-years and budget of the Legal Services Branch related to the development of legislation and regulations for the management of municipal waste, and for legal enforcement actions,
- the person-years and budget of the Office of the A.D.M., Environmental Services Division, related to municipal waste disposal issues,
- the person-years and budget of the Air Resources Branch related to the assessment of emissions from waste disposal sites,
- the person-years and budget of the Waste Management Branch related to the development of policies and programs for the management of municipal wastes, the updating of waste disposal site inventories, and the preparation of waste management master plans,
- the person-years and budget of the Laboratory Services Branch related to the analysis of leachate samples,
- the person-years and budget of the Investigations and Enforcement Branch related to investigations and enforcement of waste handlers in non-compliance with regulations,

- the person-years and budgets of the Regions related to the inspection and regulation of active municipal waste disposal sites and systems, the development of new sites, and the assessment of old, closed sites, and

- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to the approval of municipal waste disposal sites.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of municipal wastes generated (10^3 Mg/yr)**	9,800*	11,350	9,900*	11,350	11,350
Quantity of municipal wastes disposed of at landfill sites (10^3 Mg/yr)	9,500	11,177	9,600	11,151	11,067
Quantity of sewage sludges placed in drying beds or directed to landfill (10^3 Mg/yr)	1,500	1,359	600	1,100	910
No. of municipally and privately owned and operated active landfill sites receiving municipal wastes	763	709	741	706	685
No. of landfill sites operated by the Ministry of Natural Resources	519	488	518	489	488
No. of landfill sites operated by corporations for their own non-hazardous wastes	211	199	216	202	190
No. of closed landfill sites	1,252	1,352	1,265	1,366	1,337

* 1984-85 Results and 1986-87 Planned Results figures did not include non-hazardous solid industrial wastes which no are included in the definition of "municipal wastes".

** 1 Mg = 1 tonne.

The quantity of municipal wastes generated is an estimate based on average per capita waste generation figures, developed by the Waste Management Advisory Board, and Ontario population statistics. Municipal wastes are defined as residential, commercial, institutional, and non-hazardous solid industrial wastes.

Some municipal wastes are incinerated at the Toronto municipal incinerator and at SWARU in Hamilton. These facilities are represented in the MBR Project on Point Sources of Air Pollution. Minor quantities of municipal wastes are recovered from the waste stream. These wastes are evaluated in the MBR Project on Source Separation and Recycling and the MBR Project on Resource Recovery.

RESULTS

Operational Outputs

The Ministry developed a "Blueprint for Waste Management" which was released in June 1983. The status of municipal waste management activities resulting from the "Blueprint" follows:

- A "Municipal Waste Management Master Planning Program" was developed and has been implemented;
- A Regional inventory of waste sites was completed in 1984-85 and an Approvals inventory was completed during 1985-86;
- Proposed legisaltive amendments indicating specific municipal waste management responsibilities by the Ministries of Environment and Municipal Affairs are under review in 1986-87;
- Guidelines and policies on the 4Rs (reduction, re-use, recycling, recovery) were developed in 1986-87;
- A "Municipal Recycling Support Program" was developed in 1985-86 and implemented in 1986-87;
- Guidelines on the disposal of biomedical wastes were developed in 1985-86 and are being implemented in 1986-87, and
- A "Comprehensive Waste Management Program" is planned for 1987-88 which includes capital grants for private and public sector proponents to implement the 4Rs.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites assessed	2,558	2,395	2,639	2,386	2,475

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of Certificates of Approval issued	140	636	140	120	700
No. of charges laid related to non-compliance with municipal waste handling/disposal requirements	N/A	78	70	40	81
No. of laboratory analyses conducted on samples related to municipal wastes directed to landfill:					
. Inorganic	N/A	78,200	58,000	79,000	83,100
. Organic	N/A	39,600	40,000	40,000	40,000
. Microbiological	N/A	2,800	3,000	3,600	3,600

The Ministry provides funding under the "Waste Site Improvement Program" to municipalities to enable proper closing of landfill sites and for studies and remedial measures aimed at improving environmental quality at sites. The following data summarize activities under the "Waste Site Improvement Program". Data for 1986-87 and 1987-88 are not yet available as the activities funded and approval processes of the program are currently being revised.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of closures	16	12	58	N/A	N/A
No. of remedial measures	N/A	11	N/A	N/A	N/A
No. of investigative studies	20	22	97	N/A	N/A
No. of site improvements	56	84	97	N/A	N/A
No. of other projects	12	4	N/A	N/A	N/A

Program Outputs

Municipally and Privately Owned and Operated Active Landfill Sites Receiving Municipal Wastes:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites developed and operated satisfactorily	580 (76%)	526 (74%)	661 (89%)	553 (78%)	578 (84%)
No. of sites in operation with no assessment	66 (9%)	50 (7%)	0 (0%)	52 (8%)	32 (5%)
No. of sites in operation with groundwater, surface water, gas control or site management problems	117 (15%)	133 (19%)	80 (11%)	101 (14%)	75 (11%)
Total no. of sites	763	709	741	706	685

Landfill Sites Operated by the Ministry of Natural Resources:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites developed and operated satisfactorily	446 (86%)	405 (83%)	439 (85%)	385 (79%)	484 (99%)
No. of sites in operation with no assessment	57 (11%)	50 (10%)	57 (11%)	74 (15%)	0 (0%)
No. of sites in operation with groundwater, surface water, gas control or site management problems	16* (3%)	33* (7%)	22 (4%)	30 (6%)	4 (1%)
Total no. of sites	519	488	518	489	488

* Figures revised from 1985-86 Results report.

Landfill Sites Operated by Corporations for their Own Non-hazardous Wastes:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites developed and operated satisfactorily	186 (88%)	154 (77%)	195 (90%)	161 (80%)	177 (93%)
No. of operated sites with no assessment	6 (3%)	23 (12%)	4 (2%)	20 (10%)	8 (4%)
No. of sites in operation with groundwater, surface water, gas control or site management problems	19 (9%)	22 (11%)	17 (8%)	21 (10%)	5 (3%)
Total no. of sites	211	199	216	202	190

Closed Landfill Sites:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of closed sites with no identified problems	1,166 (93%)	1,092 (81%)	1,209 (96%)	1,106 (81%)	1,123 (84%)
No. of closed sites with no assessments	58 (5%)	230 (17%)	40 (3%)	231 (17%)	185 (14%)
No. of closed sites with ground-water, surface water, gas control or other problems	28 (2%)	30 (2%)	16 (1%)	29 (2%)	29 (2%)
Total no. of sites	1,252	1,352	1,265	1,366	1,337
No. of convictions obtained related to charges laid for non-compliance with municipal waste handling/ disposal requirements	N/A	9	N/A	N/A	N/A

Program Effects

The objective of this program is to prevent adverse off-site effects on human health and well-being and on the natural environment from the operation of waste disposal sites. Not all of the municipal waste sites evaluated as having operational problems are causing off-site environmental, social, economic, or public health concerns. Localized off-site effects caused by municipal waste disposal sites are summarized below.

Municipally and Privately Owned and Operated Active Landfill Sites Receiving Municipal Wastes:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites causing private or municipal water supply contamination problems	3	7	4	5	2
No. of sites causing surface water contamination problems	34	28	14	28	18
No. of sites causing gas hazard problems	1	1	0	0	0
No. of sites causing nuisance effects and interference with the use of neighbouring property*	65	75	35	61	40
No. of confirmed groundwater quality problems resulting from waste site leachates which were resolved	2	6	N/A	6	N/A
No. of outstanding confirmed groundwater quality problems resulting from waste site leachates	24	24	N/A	21	N/A

* Smoke, noise, aesthetics, litter, rats, etc.

Landfill Sites Operated by the Ministry of Natural Resources:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites causing private or municipal water supply contamination problems	0	0	0	0	0
No. of sites causing surface water and groundwater contamination problems	0	2	0	2	0
No. of sites causing gas hazard problems	0	0	0	0	0
No of sites causing nuisance effects and interference with the use of neighbouring property	8	32	10	27	3

Landfill Sites Operated by Corporations for their Own Non-hazardous Wastes:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites causing private or municipal water supply contamination problems	1	2	1	2	1
No. of sites causing surface water contamination problems	12	15	2	15	9
No. of sites causing gas hazard problems	0	0	0	0	0

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites causing nuisance effects and interference with the use of neighbouring property	5	7	0	6	2
No. of confirmed groundwater quality problems resulting from waste site leachates which were resolved	3	4	N/A	6	N/A
No. of outstanding confirmed groundwater quality problems resulting from waste site leachates	12	15	N/A	10	N/A
Closed Landfill Sites:					
No. of sites causing private or municipal water supply contamination problems	3	3	1	4	1
No. of sites causing surface water or groundwater contamination problems	22	19	13	17	16
No. of sites causing gas hazard problems	4	4	2	6	7
No. of sites causing other problems	2	2	2	2	1

Identification of the municipal waste disposal sites causing off-site problems is provided in the MBR Technical Appendices.

EFFICIENCY

Operational Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of sites assessed per person-year	25.8	23.7	25.6	21.3	21.0

Program Efficiency

Indicators not developed

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% of total no. of active landfill sites which are developed and operated satisfactorily	81%	78%	86%	79%	91%
% of total no. of closed landfill sites with no identified problems	93%	81%	94%	81%	84%

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	5,844	6,632	6,997	7,824	8,199
. Person-Years	101	101	103	112	118
. Revenue ($000s)	0	0	5	0	0

MBR PROJECT ON THE MANAGEMENT OF SPECIAL WASTES

OBJECTIVE

To regulate special waste* management systems in Ontario and to develop a Provincial special waste management facility in order to prevent adverse effects on human health and well-being and on the natural environment.

DESCRIPTION

The resources assigned to this MBR project include:

- the budget of the Policy and Planning Branch related to special waste research,
- the person-years and budget of the Legal Services Branch related to the development and enforcement of regulations and legislation for the management of special waste,
- the person-years and budget of the Office of the ADM, Environmental Services Division, related to the management of special wastes,
- the person-years and budget of the Air Resources Branch related to the assessment of air emissions from special waste facilities,
- the person-years and budget of the Water Resources Branch related to the assessment of wastewater discharges and leachates from special waste sites and facilities,
- the person-years and budget of the Waste Management Branch related to the administration of the waybill system, to the assessment of waste destruction technology, to the development of policies, regulations and legislation governing the management of special wastes, and to the Household Special Waste Collection Program,
- the person-years and budget of the Laboratory Services Branch involving the analysis of samples from waste generators and special waste facilities,

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* "Special Wastes" include liquid and solid hazardous wastes, and most liquid industrial wastes.

- the person-years and budget of the Hazardous Contaminants Branch related to the development of industrial chemical standards,

- the person-years and budget of the Investigations and Enforcement Branch related to the investigation of violations and enforcement of regulations and legislation pertaining to the management of special waste,

- the person-years and budgets of the Regions related to the regulation of generators and haulers of special wastes, to the regulation of special waste disposal facilities, and to public inquiries regarding the disposal of special wastes,

- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to the approval and certification of special waste haulers and special waste disposal facilities,

- the person-years and budget of the Spills Action Centre related to the development of policies and information systems governing spills of special wastes,

- the person-years and budget of the Financial and Capital Management Branch related to the provision of financial support to the Ontario Waste Management Corporation, and

- the person-years and budget of the Ontario Waste Management Corporation related to the development of a Provincial waste management facility.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of generators of hauled special wastes	2,650	5,000**	5,000	12,000	14,000
No. of licensed special waste haulers	320	360	400	351	380
No. of treatment/disposal sites or facilities receiving Ontario-generated special wastes*	167**	134	210	182	234
No. of special waste facilities operated in Ontario	111**	104	154	147	194
No. of PCB storage sites in Ontario	N/A	534	400	614	644
Volume of PCB contaminated liquids in storage (million litres)(est.)	N/A	1.5	1.5	1.5	1.5

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* Figures include out-of-Province locations.

** Figures revised from 1985-86 Results report.

DISPOSITION OF WAYBILL DOCUMENTED WASTES

	1984-85		1985-86		1986-87 Planned		1986-87 Preliminary Actual		1987-88 Proposed	
	Volume (10^3 Litres)	No. of Sites	Volume (10^3 Litres)	No. of Sites	Volume (10^3 Litres)	No. of Sites	Volume (10^3 Litres)	No. of Sites	Volume (10^3 Litres)	No. of Site
Incineration	76,440 (18%)	2	61,000 (11%)	6	100,000 (16%)	2	73,000 (11%)	10	80,000 (11%)	12
Direct Landfill	87,770 (20%)	11	142,000 (25%)	10	80,000 (13%)	10	170,000 (25%)	12	187,000 (25%)	12
Sewage Treatment Plants	100,690 (23%)	30	166,000 (29%)	35	150,000 (24%)	50	180,000 (27%)	60	198,000 (27%)	65
Reclamation and Re-use	74,340 (17%)	35	84,000 (15%)	31	150,000 (24%)	52	100,000 (15%)	65	110,000 (15%)	70
Export	49,240 (11%)	56	50,000 (9%)	30	50,000 (9%)	56	60,000 (9%)	35	66,000 (9%)	40
Miscellaneous	960 -	N/A	7,000 (1%)	N/A	1,000 -	N/A	20,000 (3%)	N/A	22,000 (3%)	N/A
Received at Transfer Stations	46,730 (11%)	33	55,000 (10%)	22	85,000 (14%)	40	66,000 (10%)	30	73,000 (10%)	35
Total waybill documented wastes	436,170	167	565,000	134	616,000	210	669,000	182	736,000	234

RESULTS

Operational Outputs

The Ontario Waste Management Corporation has selected a site in West Lincoln Township as its preferred site. Its technical investigations for the facility and more detailed assessments of the candidate site will be continuing in 1986-87.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of waste transfer loads recorded in waybill system	32,000	45,000*	50,000	84,000**	90,000
No. of suspected waste generators contacted for registration under Environmental Protection Act Reg.309	N/A	11,000	8,000	8,000	8,000
No. of waste generators registered under Reg. 309	N/A	5,000	6,000	12,000	14,000
No. of mobile PCB destruction units certified	N/A	1	3	2	N/A
No. of charges laid relating to violations of special waste management regulations	N/A	140	N/A	350	403
No. of laboratory analyses conducted on samples related to sites receiving special wastes:					
. Inorganic	N/A	4,200	3,000	4,500	3,000
. Organic	N/A	3,000	3,000	3,000	3,000
No. of household special waste collection projects funded	N/A	0	N/A	9	23

* Figure revised from 1985-86 Results report.

** Increase between 1985-86 and 1986-87 is attributable to implementation and enforcement of Reg. 309 and to inclusion of solid hazardous wastes in the manifest system.

Program Outputs

A detailed inventory of liquid industrial and hazardous waste sites, facilities, treatment centres and plants is provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of special waste facilities operated satisfactorily	121 (94%)	94 (90%)	145 (97%)	141 (96%)	190 (98%)
No. of special waste facilities in operation with one or more environmental or operational problems*	8 (6%)	10 (10%)	5 (4%)	6 (4%)	4 (2%)
Total no. of special waste facilities operated in Ontario	129	104	150	147	194
No. of PCB storage sites operated satisfactorily	N/A	528 (99%)	N/A	614 (100%)	644 (100%)
No. of PCB storage sites not in compliance with requirements	N/A	6 (1%)	N/A	0 (0%)	0 (0%)
Total no. of PCB storage sites in Ontario	N/A	534	N/A	614	644
No. of confirmed groundwater quality problems resolved which were attributed to leachates from special waste landfill sites	1	1	1	2	N/A
Quantity of household special wastes collected (Mg/yr) (est.)	N/A	0	30.0	N/A	66.0
No. of households participating in special waste collection projects	N/A	0	N/A	1,260	2,350

* Surface or groundwater supply contamination, aquatic ecosystem destruction or odours.

Program Effects

The figures below provide a summary of all localized environmental effects caused by special waste facilities in operation. A facility may cause more than one environmental effect.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of facilities causing drinking water supply contamination problems (surface or groundwater)	1	1	1	1	1
No. of facilities causing local aquatic ecosystem problems	0	0	0	0	0
No. of facilities causing odour problems	6	7	4	4	2
No. of facilities causing other effects of concern	3	3	1	2	2
No. of confirmed new or ongoing groundwater quality problems attributed to special waste disposal at landfill sites	6	6	7	9	N/A

EFFICIENCY

Indicators not developed

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of special waste facilities operated satisfactorily as a % of total no. of facilities operated in Ontario	94%	90%*	97%	96%	98%

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	19,241	19,221	19,777	21,967	22,118
. Person-Years	74	106	125	122	129
. Revenue ($000s)	50	48	44	49	53

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* Figure revised from 1985-86 Results report.

MBR PROJECT ON THE UTILIZATION OF SEWAGE SLUDGE AND THE MANAGEMENT OF SUBSURFACE SEWAGE SYSTEMS

OBJECTIVE

To manage the utilization of sewage sludge on land and to regulate the installation of subsurface sewage systems so as to prevent adverse effects on human health and well-being and on soils and the natural environment in Ontario.

DESCRIPTION

The resources assigned to this MBR project include:

- transfer payments to Health Units for the administration of Part VII of the Environmental Protection Act (E.P. Act),
- the person-years and budget of the Legal Services Branch related to legislative and regulatory amendments under Part VII, E.P. Act, the maintenance of agreements with Health Units under Part VII, E.P. Act, and the provision of legal advice on private sewage systems issued to Health Units and Regional staff,
- the person-years and budget of the Waste Management Branch related to sewage sludge utilization policy and program development,
- the person-years and budgets of the Laboratory Services Branch involving the testing and analysis of sewage sludge samples and of surface water samples from areas using private sewage systems and sewage sludge,
- the person-years and budget of the Investigations and Enforcement Branch related to investigations and enforcement of Part VII, E.P. Act,
- the person-years and budgets of the Regions related to the administration of Part VII, E.P. Act, and to the operation of the sludge utilization program,
- the person-years and budget of the Environmental Approvals and Land Use Planning Branch related to private sewage system policy and program development, and
- the person-years and budget of the Financial and Capital Management Branch related to the administration of transfer payments to Health Units.

(1) SLUDGE UTILIZATION

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of sewage sludge generated (10^3 Mg/yr)*	6,300	6,300	6,500	6,400	6,400
No. of sewage treatment facilities practising sludge utilization	185	183	183	184	184
No. of agricultural fields certified to receive sludge (total land area in ha)	2,806 (37,200)	1,696 (27,400)	2,333 (37,000)	1,752 (28,300)	1,745 (28,400)
No. of agricultural fields actually receiving sludge (total land area in ha)	1,259 (12,700)	1,050 (13,800)	1,195 (13,200)	1,057 (14,000)	1,034 (14,000)
No. of sludge transfer stations certified to receive sludge	34	39	38	43	45

RESULTS

Operational Outputs — Indicators not developed

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of sludge utilized on agricultural land (10^3 Mg/yr)	1,540	1,250	1,400	1,260	1,200

* 1 Mg = 1 tonne.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of sludge composted or used in mine tailings rehabilitation (10^3 Mg/yr)	130	7*	130	7	9
No. of facilities that practise sludge utilization and produce sludges of acceptable quality	162 (88%)	163 (89%)	172 (94%)	166 (90%)	172 (93%)
No. of facilities that practise sludge utilization and produce sludges of marginal quality	13 (7%)	11 (6%)	4 (2%)	9 (5%)	5 (3%)
No. of facilities that practise sludge utilization and produce sludges of unacceptable quality	10 (5%)	9 (5%)	7 (4%)	9 (5%)	7 (4%)

In most instances, sludges of marginal or unacceptable quality are being applied at reduced rates. At many facilities, measures are planned or under way to either improve the quality of sludge or to dispose of the sludge in ways other than on agricultural land. An inventory of facilities producing sludges of marginal or unacceptable quality is provided in the Technical Appendices.

Program Effects

The sludge utilization program provides two main benefits:

- Sludge disposal costs are reduced, compared with other disposal methods. Incinerator, capital and operating costs are avoided, and the costs of hauling sludge longer distances to landfill sites are decreased.

- Sludges act as soil conditioners and provide nutrients to the soil. The sludges utilized on agricultural land have a fertilizer value estimated in 1979 at $1.3 million.

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* The sharp decrease between 1984-85 and 1985-86 is attributable to the cessation of composting at the Windsor (Westerly) sewage treatment facility.

EFFICIENCY

Operational Efficiency — Indicators not developed

Program Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of facilities that practise sludge utilization and produce sludges of an acceptable quality as a % of all facilities practising sludge utilization	88%	89%	94%	90%	93%

EFFECTIVENESS — Indicators not developed

(2) PRIVATE SEWAGE SYSTEMS

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of dwellings and commercial establishments with private sewage systems (est.)	770,000	770,000	770,000	770,000	770,000
No. of licensed private sewage system installers and sewage sludge haulers	4,023	4,409	4,100	4,420	4,420

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of lots reviewed to determine their suitability for sub-surface sewage systems:					
. by MOE	2,500	5,180	3,000	5,200	5,200
. by Health Units	18,000	20,620	18,000	21,000	21,000
	20,500	25,800	21,000	26,200	26,200
No. of applications for private sewage systems reviewed:					
. by MOE	3,900	4,780	3,500	4,900	4,900
. by Health Units	13,300	18,250	13,000	18,500	18,500
	17,200	23,030	16,500	23,400	23,400
No. of Certificates of Approval issued for private sewage systems:					
. by MOE	3,000	4,600	3,000	4,650	4,650
. by Health Units	11,600	14,450	11,500	14,550	14,550
	14,600	19,050	14,500	19,200	19,200

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of complaints and failed private sewage systems investigated:					
. by MOE	700	1,070	700	1,100	1,100
. by Health Units	4,300	6,480	4,300	6,550	6,550
	5,000	7,550	5,000	7,650	7,650
No. of consultations provided by Environmental Approvals and Land Use Planning Branch to Health Units, the public and consultants regarding systems, or regarding lots where private sewage systems are proposed	900	900	900	950	950
No. of consultations provided by Regions to Health Units regarding systems or regarding lots where private systems are proposed	620	1,100	N/A	1,150	1,150
No. of new licences for private sewage system installers and sewage sludge haulers issued during year	175	220	175	225	225
No. of licences for private sewage system installers and sewage sludge haulers dropped during year*	130	20	130	20	20
No. of charges laid for private sewage systems not in compliance with Part VII, E.P. Act requirements	N/A	1	35	4	40

* Licences are mainly dropped due to business closures, not as a result of licence revocation.

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of new septic tank, holding tank and proprietary aerobic sewage system use permits issued after installation	14,000	16,290	14,000	16,400	16,400
No. of failed private sewage systems corrected	1,400	1,600	1,400	1,650	1,650
No. of groundwater quality problems resolved which were attributable to private sewage systems	58	31	N/A	35	N/A
No. of convictions obtained related to charges laid	N/A	1	N/A	N/A	N/A

Program Effects

The figures below enumerate the tertiary watersheds affected by private sewage systems. Detailed statistics on the 144 tertiary watersheds in the Province are provided in the MBR Technical Appendices.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds affected by private sewage systems:					
. Surface Water	6 (4%)	6 (4%)	6 (4%)	6 (4%)	6 (4%)
. Groundwater	18 (13%)	19 (13%)	19 (13%)	19 (13%)	19 (13%)

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of new or ongoing confirmed groundwater quality problems attributable to private sewage systems	69	43	N/A	37	N/A

Private sewage systems are widely used in recreational and rural areas. Improper installation or maintenance of these systems may result in:

- reduced in-stream oxygen levels;
- nutrient enrichment, excessive aquatic growth and reduced aesthetics;
- bacterial or viral contamination; and
- destruction of fish habitat.

Localized impacts in the tertiary watersheds receiving private sewage system inputs are summarized below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with localized areas unsuitable for drinking water supply:					
. Surface Water	3	3	3	3	3
. Groundwater	18	19	18	19	19
No. of watersheds with areas requiring high water treatment costs:					
. Surface Water	3	3	3	3	3
. Groundwater	10	10	10	10	10

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of watersheds with areas unsuitable for contact recreation	1	1	1	1	1
No. of watersheds with areas of reduced amenity for non-contact recreation	2	2	2	2	2
No. of watersheds with areas of poor quality or reduced fishing	3	3	3	3	3
No. of watersheds with downstream damages to special or unique features	2	2	2	2	2

In urban areas without communal sewage services, 28 communities were identified in 1985-86 as requiring substantial replacement of septic systems to protect public health. The systems generally are very old and were installed before provincial regulations were developed. The Ministry provides financial assistance for the replacement of these systems on a community basis. Further details are provided in the MBR Project on Sewage Servicing Infrastructure.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	2,786	2,853	5,228	6,340	6,325
. Person-Years	52	46	44	43	45
. Revenue ($000s)	150	165	160	180	196

MBR PROJECT ON SOURCE SEPARATION AND RECYCLING

OBJECTIVES

To assist municipalities, private firms and non-profit organizations in Ontario in establishing source separation and recycling projects with demonstrated long term viability as a means of reducing the amount of waste requiring landfilling or incineration.

DESCRIPTION

The resources assigned to this MBR project include:

- transfer payments for the establishment and initial operation of source separation projects,
- the person-years and budget of the Legal Services Branch related to the development of regulations and legislation for returnable carbonated soft-drink containers, and
- the person-years and budgets of the Waste Management Branch and the Regions related to source separation policy development and to the regulation of returnable carbonated soft-drink containers.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of municipal waste generated in Ontario (10^3 Mg/yr)**	9,800*	11,350	9,900*	11,350	11,350

Municipal waste is defined as residential, commercial, institutional, and non-hazardous solid industrial waste. The estimates of wastes generated are based on average generation figures developed by the Waste Management Advisory Board and on Ontario population statistics.

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* The 1984-85 Results and the 1986-87 Planned figures did not include non-hazardous solid industrial wastes.

** 1 Mg = 1 tonne.

Municipal waste in Ontario is composed of the following materials amenable to recycling by source separation:

- Newsprint 9%,
- Glass Containers 5%,
- Ferrous Containers 3%,
- Kraft Paper (including cardboard) 10%, and
- Fine Paper 8%.

(1) MOE FUNDED PROJECTS

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of source separation proposals funded:					
. New	0	10	2	4	11
. From previous years	8	4	14	10	14

A listing of MOE funded projects is provided in the MBR Technical Appendices.

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total waste generated in communities/offices with source separation projects (10^3 Mg/yr)	350	320	680	585	1,090

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total recovered products (10^3 Mg/yr):					
. Newsprint	13.9	17.5	26.3	32.0	56.5
. Corrugated Paper	2.2	3.0	6.2	5.5	9.7
. High Grade Paper	2.7	2.0	2.1	3.7	6.4
. Glass	1.5	2.4	6.5	4.4	7.8
. Metal	0.6	0.8	2.9	1.5	2.6
	20.9	25.7	44.0	47.1	83.0
Direct employment in source separation projects (person-years)	61	66	117	120	212
Community participation rates in projects	10-40%	10-40%	10-40%	10-40%	10-40%
Project revenues ($000s)	1,560	1,667	2,121	3,061	5,395
Operating expenditures ($000s)	2,348	2,704	4,400	4,956	8,715

Program Effects

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of self-sufficient projects	1	0	1	1	1
No. of firms using source separation materials	17	17	17	17	17
Recycling rate achieved for non-refillable soft drink containers*	Data base not developed				

* Environmental Protection Act, Regulation 622 requires a recycling rate of 50% to be achieved by November 1, 1988. Data collection related to the actual recycling rate began in the fall of 1986.

EFFICIENCY

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Operational Efficiency	Indicators not developed				
Program Efficiency					
Average revenue received per Mg of waste separated as a % of average cost per Mg of waste separated	66%	62%	48%	62%	62%

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Diversion rate*	5.7%	2.4%	6.1%	7.5%	7.1%

(2) NON-MOE FUNDED PROJECTS

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of source separation projects:					
. New	6	4	N/A	0	0
. From previous years	47	50	N/A	46	33

* Volume of waste collected by source separation programs as a percent of total volume of waste generated in communities with source separation programs.

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total waste generated in communities/ offices with source separation projects (10^3 Mg/yr)	1,540	1,540	1,540	1,540	1,540
Total recovered products (10^3 Mg/yr):					
. Newsprint	22.6	23.1	24.9	24.3	25.5
. Corrugated Paper	4.8	2.9	5.3	3.0	3.2
. High Grade Paper	1.1	0.9	1.3	0.9	1.0
. Glass	1.8	1.6	2.0	1.7	1.8
. Metal	0.3	0.4	0.3	0.4	0.4
	30.6	28.9	33.8	30.3	31.9
. Direct employment in source separation projects (person-years)*	126	84	126	87	92
Community participation rates in projects	N/A	N/A	N/A	N/A	N/A
Project revenues ($000s)	N/A	N/A	N/A	N/A	N/A
Operating expenditures ($000s)	N/A	N/A	N/A	N/A	N/A

* Employment figures do not include volunteers.

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Diversion rate	2.0%	1.8%	2.2%	1.9%	2.0%

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	793	660	1,931	4,447	5,866
. Person-Years	5	3	9	9	9

MBR PROJECT ON RESOURCE RECOVERY

OBJECTIVE

To develop, demonstrate and assess the technology and economic viability of resource recovery, as a means of reducing the amount of waste requiring landfilling or incineration in Ontario.

DESCRIPTION

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to the legal review of resource recovery policies and the development of resource recovery contracts,
- the person-years and budget of the Waste Management Branch related to the operation of the Experimental Resource Recovery Plant (ERRP), and to the development of resource recovery policies and programs, and
- the person-years and budgets of the Regions related to the provision of information to the public and to municipalities on resource recovery initiatives, and to the development of resource recovery plans.

Resource recovery processes under ongoing review include:

- Shredding,
- Air Separation,
- Magnetic Separation,
- Screening,
- Incineration with Heat Recovery,
- Composting, and
- Paper Recovery.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Quantity of municipal waste generated (10^3 Mg/yr)**	9,800*	11,350	9,900*	11,350	11,350

Municipal waste is defined as residential, commercial, institutional and non-hazardous solid industrial waste. This estimate is based on average waste generation figures developed by the Waste Management Advisory Board and on Ontario population statistics.

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of market development projects under way at the ERRP	12	12	12	11	0
No. of market development projects completed at the ERRP	N/A	4	N/A	1	0

A listing of market development projects is provided in the MBR Technical Appendices.

MOE terminated the agreement with Metropolitan Toronto, effective March 31, 1987, for operation of the ERRP because:

- the technical testing of equipment and the development of markets has been completed; and
- the Ministry plans to re-allocate the resources to promote low technology resource recovery through source separation, expanded financial assistance to source separation projects, and other measures.

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* The 1984-85 Results and 1986-87 Planned figures did not include non-hazardous solid industrial wastes.
** 1 Mg = 1 tonne.

Program Outputs

The following statistics relate to the Experimental Resource Recovery Plant.

	1984-85		1985-86		1986-87 Planned		1986-87 Preliminary Actual	
	$000s	10^3 Mg/yr	$000s	10^3 Mg/yr	$000s	10^3 Mg/yr	$000s	10^3 Mg/yr
Waste receipts	1,982.0	141	1,758.0	129	1,920.0	140	1,800.0	120
Waste processed		24		17		26		1*
Total recovered products:								
. Refuse Derived Fuel	-	1.7	0.9	0.1	-	-	-	-
. Ferrous	116.5	1.7	55.4	1.0	100.0	1.4	10.0	0.2
. Corrugated Paper	94.3	1.1	48.0	0.8	112.0	1.5	24.0	0.4
. Compost	11.5	1.6	3.4	0.3	20.0	2.0	10.0	1.0
. Baled Waste Newspaper	-	-	-	-	-	-	-	-
	$ 222.3	6.1	$ 107.7	2.2	$ 232.0	4.9	$ 44.0	1.6*

The following statistics relate to non-MOE Resource Recovery Projects.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of non-MOE operated resource recovery projects	2	2	2	3	4

* The ERRP's processing facilities were not operative, except in April 1986, due to shredder motor failure. The recovered products were detained mainly from in-stock materials.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Total recovered products (10^3 Mg/yr):					
. Refuse Derived Fuel	N/A	N/A	N/A	N/A	N/A
. Ferrous	3.9	1.5	N/A	2.0	2.5
. Corrugated Paper	1.1	1.2	N/A	1.2	1.5
. Compost	N/A	N/A	N/A	N/A	N/A
. Baled Waste Newspaper	0.3	N/A	N/A	N/A	N/A
. Other	N/A	N/A	N/A	N/A	N/A
	5.3	2.7	4.9	3.2	4.0

Program Effects

The most significant effect associated with this program would be the adoption of high technology resource recovery facilities by municipalities. One municipal resource recovery project being planned is a refuse derived fuel incinerator for Victoria Hospital in London, Ontario.

EFFICIENCY

Operational Efficiency — Indicators not developed

Program Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual
Total recovered products as a % of waste processed at the ERRP	25%	13%	19%	*

EFFECTIVENESS — Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	4,245	3,902	5,554	2,813	3,700
. Person-Years	6	6	9	9	9
. Revenue ($000s)	2,247	1,879	1,900	1,500	1,500

* The ERRP processed in-stock materials after the shredder motor failed in April 1986.

MBR PROJECT ON PESTICIDES CONTROL

OBJECTIVE

To control the distribution, sale, storage and use of pesticides through the regulation and education of the pesticides industry, applicators, farmers, municipalities, and the public in Ontario in order to protect the natural environment and human health while allowing for the beneficial uses of pesticides.

DESCRIPTION

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to the development of termite control contracts and to legal enforcement actions under the Pesticides Act,
- the person-years and budget of the Air Resources Branch related to soil and vegetation sampling for pesticide residuals,
- the person-years and budget of the Water Resources Branch related to the sampling of drinking water supplies for pesticide residuals,
- the person-years and budget of the Hazardous Contaminants Branch related to pesticides regulatory and educational activities, termite surveys, and transfer payments for termite control,
- the person-years and budget of the Pesticides Advisory Committee,
- the person-years and budget of the Investigations and Enforcement Branch related to investigations of violations and the enforcement of the Pesticides Act,
- the person-years and budgets of Regional pesticides control officers, and
- the perons-years and budget of the Environmental Approvals and Land Use Planning Branch related to the issuance of permits and licences to vendors and users of pesticides.

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of classified pesticides (approx.)	4,200	4,200	4,200	4,200	4,200
No. of farmers using pesticides	Data base not developed				
Quantities of pesticides used in all Southern Ontario Great Lakes drainage basins (Mg/year)(est.)	8,400	8,400	8,400	8,400	8,400
No. of residents using pesticides	Data base not developed				
No. of municipalities with termite infestations	N/A	26	N/A	26	26

RESULTS

Operational Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of Licences and Permits issued and/or renewed:					
. Vendors	3,983	4,327*	4,500	4,500	4,615
. Operators	1,400	1,550*	1,685	1,868	1,890
. Structural Exterminators	965	1,113*	1,022	1,170	1,195
. Land Exterminators	8,441	9,581*	10,382	10,875	11,250

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* Figures revised from 1985-86 Results report.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Water Exterminators	340	373*	322	383	400
. Custom Sprayers**	655	675*	685	667	675
. Water Permits	470	511*	540	550	600
. Land Permits	845	945*	1,045	1,400	1,500
. Structural Permits	176	270*	360	117	120
No. of local pesticides certification courses conducted	67	151	128	151	154
No. of applications for examinations received	2,650	3,151	3,534	3,865	4,638
No. of examinations conducted	2,596	2,785	4,227	4,500	5,400
No. of vendor salespersons receiving voluntary certification	300	0***	N/A	1,100	1,100
No. of audits of pesticides applications by aircraft, ground equipment or concentrated airblast	407	76	98	91	99

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* Figures revised from 1985-86 Results report.

** Custom sprayers are registered under the Pesticides Act and are not subject to annual renewal.

*** In 1985-86, the course was temporarily discontinued.

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of audits of container disposal practices	281	48	100	51	53
No. of audits of licensed exterminator practices	213	109	160	123	138
No. of audits of compliance with permit requirements	76	63	76	86	96
No. of municipalities receiving termite grants	N/A	11	N/A	6	6
No. of properties treated for termite infestation	N/A	589*	N/A	600	600
No. of charges laid related to violations of the Pesticides Act	N/A	23	N/A	38	44

The Ministries of the Environment and Natural Resources have been collecting and testing sport fish in Ontario for pesticides, heavy metals, and organic contaminants since 1977, in selected lakes, rivers, and local areas in the Great Lakes. The cumulative number of waterbodies and tertiary watersheds tested as part of the "Sport Fish Testing Program" are given below:

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Cumulative no. of waterbodies tested for fish contaminants	1,325	1,348	1,425	1,409	1,500
Cumulative no. of waterbodies tested for PCBs and organochlorine pesticides	394	428	469	450	500

* Figure revised from 1985-86 Results report.

Details on the health significance of contaminants in sport fish within specific waterbodies are provided in the "Guide to Eating Ontario Sport Fish, 1986". Detailed water quality information on the 144 tertiary watersheds in the Province can be found in the MBR Technical Appendices.

In addition to its involvement with the "Sport Fish Testing Program", the Ministry has undertaken a "Nearshore Young-of-the-Year Fish Contaminant Surveillance Program" since 1975 in 14 tertiary watersheds draining into the Great Lakes. Young-of-the-year spottail shiners are collected and tested for organochlorine contaminants and heavy metals. The bio-monitoring data are used to identify areas of concern for point source investigations, to assess temporal contaminant trends, and to identify emerging problems in the nearshore areas of the Great Lakes. Detailed water quality information on the 14 watersheds can be found in the MBR Technical Appendices.

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of investigations regarding aerial, ground, structural or aquatic applications of pesticides	644	513	600	445	366
No. of groundwater quality problems resolved which were attributed to pesticides	19	49	35	46	N/A
No. of farmers using integrated pest management techniques	Data base not developed				
No. of convictions obtained related to charges laid	N/A	4	N/A	N/A	N/A

Termite infestation problems exist in localized areas of Southern Ontario. Infestations are most severe in the City of Toronto and the Borough of East York where 75% of all treated properties are located. Detailed information is available in the MBR Technical Appendices.

Program Effects

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of private wells contaminated by pesticides	43	95	58	19*	27
No. of instances of indoor exceedences of permissible concentrations of pesticides	3	6	4	5	6
No. of instances of possible public health effects reported	Data base under development				
No. of confirmed new or ongoing groundwater quality problems attributed to pesticides	37	40	78	47	N/A

Surface water monitoring data indicate few exceedences of water quality objectives for pesticides in use. Most exceedences of objectives are noted for pesticides now banned or severely restricted.

There is a high level of concern expressed by the public regarding the environmental and health effects resulting from pesticides use. Complaints and inquiries originate from all parts of the Province and have centred on licensing, application, storage and disposal practices. Detailed information on pesticides problems are available in the MBR Technical Appendices.

In 1985-86, no sport fish tested for residual DDT and other organochlorine pesticides showed concentrations in exceedence of fish consumption guidelines. Concentration levels of pesticides and other organic contaminants have declined since 1976 in sport fish tested in the English-Wabigoon River System and the following Great Lakes areas: Ganaraska River, Credit River, Lake Huron (Point Edward to Grand Bend), Lake Superior (Superior Island), Lake St. Clair and Lake St. Francis.

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* In 1986-87, MOE ceased monitoring for pesticides in shallow wells which failed to meet the Ministry's construction or maintenance requirements.

In 1985-86, PCBs were detected in concentrations exceeding the IJC guidelines in young-of-the-year fish in Lake Ontario tributaries including the Niagara River. Similarly, PCBs in young-of-the-year fish exceeding the IJC guidelines were detected in one western Lake Erie watershed, in Lake Superior and in the Spanish River. In a significant change from previous years, Mirex and BHC (Lindane) were not detected in young-of-the-year fish in the Upper Great Lakes, Lake Erie and western Lake Ontario. Details can be found in the MBR Technical Appendices.

EFFICIENCY — Indicators not developed

EFFECTIVENESS — Indicators not developed

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	3,145	3,634	3,664	3,233	3,303
. Person-Years	41	55	53	46	50
. Revenue ($000s)	342	360	335	400	420

MBR PROJECT ON ENVIRONMENTAL ASSESSMENT AND PLAN REVIEW

OBJECTIVE

To provide for the consideration and incorporation of environmental safeguards into public and private sector programs and undertakings in order to minimize detrimental effects on the environment and people of Ontario.

DESCRIPTION

The resources assigned to this MBR project include:

- the person-years and budget of the Legal Services Branch related to hearings before the Environmental Assessment Board (E.A. Board), the Ontario Municipal Board or related to joint hearings before the Consolidated Hearings Board (C.H. Board),
- the person-years and budgets of the Air Resources Branch, the Water Resources Branch, the Waste Management Branch, the Hazardous Contaminants Branch, the Regions and the Environmental Approvals and Land Use Planning Branch related to the review of specific projects and hearings under the Environmental Assessment Act (E.A. Act),
- the person-years and budgets of the Environmental Assessment Branch and of the Environmental Assessment Board, and
- the person-years and budgets of the Regions and the Environmental Approvals and Land Use Planning Branch related to the provision of comments on provincial and municipal policies and plans circulated to the Ministry for review.

(1) ENVIRONMENTAL ASSESSMENT

SCOPE

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of projects undergoing pre-submission consultation	66	83	80	100	110

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of formal submissions made to the Minister:					
. Individual	7	9	20	21	23
. Class	6	3	5	2	1
	13	12	25	23	24
No. of project requests for designation under the E.A. Act	6	13	10	20	20
No. of project requests for exemption under the E.A. Act	28	31	20	30	20
No. of environmental assessments referred to the E.A. Board or the C.H. Board for hearings	3	2	6	8	8

RESULTS

Operational Outputs

No. of pre-submission consultations completed	13	19	25	30	30
No. of Completions of Reviews issued	9	7	25	18	10
No. of requests for designation processed	5	11	10	20	20
No. of requests for exemption processed	39	22	20	30	30

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of E.A. Board or C.H. Board hearings completed	4	3	6	4	3
No. of audits conducted on approved environmental assessments	0	53	20	3	5

Program Outputs

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
No. of approvals granted	6	9	25	20	20
No. of exemptions granted under S.29 of the E.A. Act	13	20	20	25	25

A summary of environmental assessment approvals is provided in MBR Technical Appendices.

Program Effects

Benefits of the environmental assessment process include:

- the avoidance of future damages to the environment due to inadequate project planning,
- greater public confidence that major provincial and municipal undertakings are adequately protecting the environment, and
- cost savings to proponents through comprehensive planning and the existence of an accepted process for dealing with objections to the development.

EFFICIENCY

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Operational Efficiency					
Average number of calendar days devoted to review of individual environmental assessments from formal submission to Notice of Completion of Review	609	373	N/A	375	375
Average number of calendar days from the time a formal Environmental Assessment document is submitted to the Minister until a notice of approval is issued	780	764	N/A	765	765
Program Efficiency	Indicators not developed				

EFFECTIVENESS — Indicators not developed

(2) PLAN REVIEW

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
SCOPE					
No. of Plans submitted to the Ministry for review:					
. Official Plans	59	77	59	75	75
. Official Plan Amendments	599	718	599	720	720

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Plans of Subdivision and Condominium Plans	611	700	611	700	700
. Consents to Sever	930	1,000	930	1,000	1,000
. Ontario Pipeline Co-ordination Committee Plans (including pre-submission drafts and post-approval monitoring reports)	25	17	25	15	15
. Industrial Park Proposals	9	0	9	0	0
. Plans of Other Agencies	0	0	0	0	0

RESULTS

Operational Outputs

Official Plans reviewed with comments	59	77	59	75	77
. Official Plan Amendments reviewed with comments	599	718	599	720	720
Plans of Subdivision and Condominium plans reviewed with comments	611	700	611	700	700
Consents to Sever reviewed with comments	930	1,000	930	1,000	1,000
Ontario Pipeline Co-ordination Committee plans reviewed with comments	25	17	25	15	15

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
Industrial Park proposals reviewed with comments	9	0	9	0	0
Plans of other agencies reviewed with comments	N/A	0	N/A	0	0

Program Outputs

The Ministry provides plan review comments to approval agencies related to MOE's mandate for accordance with Policy 07-02. The proportion of comments accepted by the respective review agencies has not been quantified, but is considered to be high. For example, an audit conducted in 1984-85 showed that all Ministry comments in plans of subdivision and condominium plans had been accepted by the approval agency.

Program Effects

Benefits of the land use plan review process include the avoidance or minimization of:

- damages to the environment,
- conflicts between incompatible land uses, and
- costs of pollution abatement equipment and measures.

EFFICIENCY

Operational Efficiency

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% Official Plans reviewed within requested time	56	30	56	N/A	N/A
% Official Plan Amendments reviewed within requested time	54	54	54	N/A	N/A
% Plans of Subdivision and Condominium Plans reviewed within requested time	52	54	52	N/A	N/A
Consents to Sever reviewed within requested time	N/A	N/A	N/A	N/A	N/A
% Ontario Pipeline Co-ordination Committee Plans reviewed within requested time	50	No reviews	50	No reviews	No reviews
% Industrial Park proposals reviewed within requested time	100	No reviews	100	No reviews	No reviews

EFFECTIVENESS

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
% recommendations incorporated in approved Official Plans	95	95	95	N/A	95
% recommendations incorporated in approved Official Plan Amendments	94	95	94	N/A	96
% recommendations incorporated in approved Subdivision Plans and Condominium Plans	92	95	92	N/A	97
% recommendations incorporated in approved Ontario Pipeline Co-ordination Committee Plans	100	Not Applicable	100	N/A	100
% recommendations incorporated in approved Industrial Park proposals	98	Not Applicable	98	Not Applicable	Not Applicable

RESOURCES

	1984-85	1985-86	1986-87 Planned	1986-87 Preliminary Actual	1987-88 Proposed
. Expenditures ($000s)	4,776	5,454	6,035	5,424	5,517
. Person-Years	92	92	97	83	86

EMPLOYMENT EQUITY/AFFIRMATIVE ACTION RESULTS ABSTRACT

OBJECTIVES

To provide equal opportunity for employment, to integrate modules and categories to a minimum of 30 percent female representation and to raise the level and diversify the occupational distribution of women.

SCOPE

MINISTRY EMPLOYEES:

MALE #1727	%76.89	FEMALE #519	%23.11	TOTAL 2246

REGIONAL EMPLOYMENT:

MALE #1040	%89.12	FEMALE #127	%10.88	TOTAL 1167

SPECIAL CORPORATE OBJECTIVES

1) Corporate Under-Represented Occupational Groups: in which women have less than 30% representation.

2) Applicable Feeder Groups: Occupational areas which provide the major feeder groups for the corporately under-represented occupational groups such as seasonal employees, unclassified employees, well represented groups/classes.

SPECIAL MINISTRY OBJECTIVES

Training Developing and Promoting Women for the following areas:

1)	Administrative Module	- Financial Administration - Systems Services
2)	Professional Module	- Engineering & Surveying - General Scientific - Resources Planning & Management
3)	Scientific and Professional Services Category	- General Scientific - Resources Planning & Management
4)	Technical Services Category	- Resources Support

RESULTS

OPERATIONAL OUTPUTS

REGULAR ONGOING PROGRAM OUTPUTS

Employment Equity Advisory Committee meetings and projects, Action 80's Bulletin, career counselling, preparation of E. E. guide for managers and employees, Ministry E. E. MBR preparation with E. E. representatives assisting in documentation of their branch action plans, updating of booklet "Women in the Environment", designing and preparation of poster to attract young women into engineering and science positions, design and preparation of job profile brochures for the various modules and categories applicable to MOE, regional visits and seminars.

SPECIAL INITIATIVES (TO MEET CORPORATE AND MINISTRY OBJECTIVES)

1) Implementation of a career resources inventory for women,

2) Adaptation of the assessment centre technique into a tool that can be used to identify women with potential to move into middle/senior management positions with corresponding career action plans.

3) Continuation of two year civil/chemical engineering training initiative in the approvals and engineering area.

	1985-86 Actual		1986-87 Planned		1987-88 Proposed	
ACCELERATED CAREER DEVELOPMENT INITIATIVES	#34	%6.7	#19	%3.6	#20	%3.8
HIRE/PROMOTION TARGETS	#21	%4.1	#24	%4.6	#20	%2.3

PROGRAM EFFECTS

1) To increase female representation in the two modules (administrative and professional) and two categories (scientific and professional services and technical services) in the areas targetted.

2) Decrease wage gap a further 1%.

3) Increase staff training and development dollars spent on women in both technical/professional and management/supervisory courses.

EXPLANATION OF CHANGES TO PROGRAM

No changes anticipated.

RESOURCES

SALARIES AND BENEFITS	$124,655
OTHER DOE	$ 10,000
STAFF YEARS:	2

MANAGEMENT BY RESULTS EXPENDITURES: 1986-87 Preliminary Actuals

RECONCILIATION OF EXPENDITURES

January 1987

PROJECT TITLES:	Reg of Comm Water Supply		Operation of MOE Water Supply Fac		Water Services Infrastructure		Reg of Comm Sewage Treat Facility Discharges		Oper of MOE Sewage Treat Facilities		Sewage Serv Infra-Structure		Surface Gndwater Mgt		Mgt of Ind. Point Sources of Water Poll		Mgt of Non-Point Sources of Water Poll		Mgt of Trans-Boundary Water Poll	
Page 1	#1		#2		#3		#4		#5		#6		#7		#8		#9		#10	
ACTIVITY/Organisation																				
ANALYSIS RESEARCH AND PLANNING	494.5	-	-	-	-	-	494.5	-	-	-	-	-	-	-	494.5	-	-	-	-	-
LEGAL SERVICES	38.2	0.6	38.2	0.6	53.4	0.9	62.6	1.0	38.2	0.6	53.4	0.9	15.3	0.3	155.7	2.6	62.6	1.0	77.9	1.3
CAPITAL MGT AND REVENUE (Part 2 of Financial and Capital Management Branch)	-	-	364.4	7.1	252.3	4.5	-	-	776.8	15.2	536.5	12.5	-	-	-	-	-	-	-	-
PROG ADMIN (SUPPORT SERVICES)	31.3	0.5	-	-	-	-	-	-	-	-	-	-	-	-	31.3	0.5	-	-	31.3	0.5
AIR RESOURCES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WATER RESOURCES	2346.4	28.2	-	-	38.9	1.1	3611.0	25.8	73.3	0.7	1047.8	0.9	479.8	7.3	3638.9	51.1	4318.6	36.2	1465.2	15.7
WASTE MANAGEMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LABORATORY SERVICES	2969.6	41.5	1194.5	22.2	0.0	0.0	689.4	12.1	535.8	11.4	0.0	0.0	0.0	0.0	2134.5	17.4	4989.3	64.4	640.0	13.9
Laboratory Services Branch	2139.8	28.2	871.3	18.0	-	-	557.1	10.0	357.1	7.8	-	-	-	-	1216.3	10.9	4515.2	56.2	557.1	12.7
Northwest Lab	439.7	5.4	143.3	1.5	-	-	7.8	0.1	6.8	0.1	-	-	-	-	364.5	3.9	191.2	1.7	70.6	0.9
Southwest Lab	106.2	2.8	67.3	1.7	-	-	69.2	1.7	106.2	2.6	-	-	-	-	506.3	2.4	189.6	4.9	12.3	0.3
Southeast Lab	283.9	4.1	112.6	1.0	-	-	55.3	0.3	65.7	0.9	-	-	-	-	47.4	0.2	93.3	1.6	-	-

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INTERGOV REL & STRATEGIC PROJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.8	3.6	152.8	1.3	1832.2	12.5
Office of the ADM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120.8	1.7	-	-	120.8	1.6
Intergov Relations Office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	307.1	3.0
APIOS Coordination Office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Niagara River Improvement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	518.2	2.0
Detroit/St Clair/St Mary's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	654.1	4.0
Hazardous Contaminants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232.0	1.9	152.8	1.3	232.0	1.9
PROG ADMINISTRATION (REGIONS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8834.0	2.5	-	-	-	-
ENVIR. COMP. CORP.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	417.2	3.0	-	-	-	-
ENVIRONMENTAL ASSESSMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMPLIANCE & ENFORCEMENT	1134.3	20.5	543.6	10.1	497.8	9.2	996.9	18.3	740.6	10.5	430.0	8.0	218.9	4.1	5139.8	72.4	1601.4	30.2	115.1	2.2
Northwestern Region	130.8	2.3	130.8	2.5	31.8	0.5	85.9	1.5	135.4	2.7	22.4	0.4	11.2	0.1	610.8	7.4	160.6	3.1	22.4	0.4
Northeastern Region	212.5	3.7	17.1	0.3	202.2	3.6	54.8	0.9	3.5	0.1	133.7	2.3	-	-	986.8	15.0	178.3	3.0	1.6	-
Southwestern Region	296.5	4.9	-	-	32.8	0.6	207.6	3.8	-	-	36.4	0.7	-	-	901.5	13.7	236.7	4.3	-	-
West Central Region	45.6	0.9	6.1	0.1	27.3	0.6	91.1	1.8	325.8	3.1	36.4	0.7	66.8	1.3	507.0	6.4	100.2	2.0	91.1	1.8
Central Region	154.9	2.8	285.8	5.4	66.0	1.0	285.8	4.9	-	-	66.0	1.0	-	-	720.7	10.5	362.7	7.6	-	-
Southeastern Region	229.5	4.9	103.8	1.7	137.7	2.9	132.2	2.8	275.7	4.6	135.1	2.9	93.2	1.9	528.2	4.8	229.7	3.1	-	-
Investigations & Enforcement	54.5	1.0	-	-	-	-	139.5	2.6	-	-	-	-	47.7	0.8	462.9	8.6	61.3	1.1	-	-
Spills Action Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	421.9	6.0	271.9	6.0	-	-
ENV APPROVALS & TECH SUPPORT	373.9	3.9	10.9	0.2	701.2	11.5	553.8	8.2	139.7	1.3	532.7	9.2	757.2	12.7	1237.3	17.5	1525.9	23.8	61.0	1.1
Exec. Dir. Approvals & Eng.	-	-	-	-	133.2	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northwestern Region	-	-	-	-	-	-	6.2	0.1	5.4	0.1	-	-	112.5	1.9	218.0	3.8	80.4	1.3	28.2	0.6
Northeastern Region	-	-	-	-	-	-	15.4	0.2	-	-	6.1	0.1	75.3	1.0	241.3	3.7	98.4	2.0	1.2	-
Southwestern Region	-	-	-	-	115.1	1.8	125.6	2.0	20.9	0.3	-	-	59.8	1.3	110.6	1.7	369.5	4.7	-	-
West Central Region	15.8	0.4	5.7	0.1	10.0	0.2	31.6	0.5	113.4	0.9	17.2	0.2	127.7	2.0	114.8	0.6	196.6	3.1	31.6	0.5
Central Region	90.0	-	-	-	16.3	0.3	83.5	1.2	-	-	-	-	209.7	4.8	146.6	2.7	289.1	5.6	-	-
Southeastern Region	16.2	0.1	5.2	0.1	15.6	0.3	26.1	0.5	-	-	31.3	0.6	172.2	1.7	104.1	1.6	277.1	5.4	-	-
Environmental Approvals	251.9	3.4	-	-	411.0	6.9	265.3	3.7	-	-	478.1	8.3	-	-	301.9	3.4	214.8	1.7	-	-

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ENVIR. ASSES. BOARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROJECT ENGINEERING	518.6	5.6	511.4	3.4	68196.9	14.4	553.2	3.8	685.6	4.6	68544.5	18.2	-	-	-	-	-	-	-	-
UTILITY OPERATIONS	0.0	0.0	26472.7	219.8	0.0	0.0	0.0	0.0	52468.5	445.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northwestern Region	-	-	1356.9	13.9	-	-	-	-	1645.3	16.1	-	-	-	-	-	-	-	-	-	-
Northeastern Region	-	-	1854.4	18.0	-	-	-	-	5436.2	49.5	-	-	-	-	-	-	-	-	-	-
Southwestern Region	-	-	9590.7	93.1	-	-	-	-	6393.8	78.9	-	-	-	-	-	-	-	-	-	-
West Central Region	-	-	1818.3	18.7	-	-	-	-	9005.1	88.3	-	-	-	-	-	-	-	-	-	-
Central Region	-	-	9743.7	53.8	-	-	-	-	24325.2	149.2	-	-	-	-	-	-	-	-	-	-
Southeastern Region	-	-	2108.7	22.3	-	-	-	-	5662.9	63.4	-	-	-	-	-	-	-	-	-	-
ONT WASTE MGT CORP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS: -----)	7906.8	100.8	29135.7	263.4	69740.5	41.6	6961.4	69.2	55458.5	489.7	71144.9	49.7	1471.2	24.4	22436	170.6	12650.6	156.9	4222.7	47.2

CAPITAL COMPONENT(C): (55,779) (56,906)

Page 4 ACTIVITY/Organisation	Mgt of Point Sources of Air Poll #11		Mgt of Non-Pt Sources of Air Poll #12		Mgt of Trans Boundary Air Poll & Atmos Deposition #13		Mgt of Mun Wastes dir to Landfill Sites #14		Mgt of Special Wastes #15		Use of Sewage Sludge/ Mgt of Subsurface Sewage System #16		Source Separation #17		Resource Recovery #18		Pesticides Control #19		Env Assessmt and Plan Review #20		T O T A L S	
ANALYSIS RES & PLANNING	724.5	-	-	-	-	-	46.0	-	46.0	-	-	-	-	-	-	-	-	-	-	-	2300.0	0.0
LEGAL SERVICES	77.9	1.3	38.2	0.6	155.7	2.6	247.3	4.1	93.1	1.5	117.5	1.9	22.9	0.4	22.9	0.4	77.9	1.3	77.9	1.3	1526.8	25.2
CAPITAL MGT AND REVENUE (Part 2 of Financial and Capital Management Branch)	-	-	-	-	-	-	-	-	72.1	1.8	-	-	-	-	-	-	-	-	-	-	2382.1	41.1
PROG ADMIN (SUPPORT SERVICES)	31.3	0.5	31.3	0.5	31.3	0.5	31.3	0.5	31.3	0.5	-	-	-	-	-	-	-	-	-	-	250.4	4.0
AIR RESOURCES	6388.4	65.4	1472.9	17.1	1178.2	19.6	53.6	0.8	98.2	1.1	-	-	-	-	-	-	-	-	125.0	2.3	9236.3	186.3
WATER RESOURCES	23.5	0.4	-	-	799.3	13.0	31.4	0.2	31.4	0.2	73.3	0.4	-	-	-	-	209.6	0.7	31.4	0.2	18219.8	182.1
WASTE MANAGEMENT	-	-	-	-	-	-	2257.0	19.3	2718.3	37.2	-	-	4420.0	8.2	2763.0	8.3	-	-	-	-	12158.3	73.0
LABORATORY SERVICES	2613.4	21.0	1185.1	7.3	1577.0	36.3	1393.7	15.0	42.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	170.0	0.0	0.0	0.0	20135.2	263.4
Laboratory Services Branch	2581.4	20.6	1185.1	7.3	1570.8	36.2	1285.1	13.5	42.9	0.9	-	-	-	-	-	-	170.0	-	-	-	17049.2	222.3
Northwest Lab	32.0	0.4	-	-	6.2	0.1	10.7	0.1	-	-	-	-	-	-	-	-	-	-	-	-	1272.8	15.2
Southwest Lab	-	-	-	-	-	-	21.8	0.6	-	-	-	-	-	-	-	-	-	-	-	-	1078.9	17.0
Southeast Lab	-	-	-	-	-	-	76.1	0.8	-	-	-	-	-	-	-	-	-	-	-	-	734.3	8.9

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INTERGOV REL & HAZ CONT COORD	232.0	1.9	152.8	1.3	6605.0	10.6	0.0	0.0	308.4	2.8	0.0	0.0	0.0	0.0	0.0	0.0	1389.8	12.5	0.0	0.0	11025.8	46.5
Office of the ADM	-	-	-	-	120.8	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	362.4	5.0
Intergov Rel Office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	307.1	3.0
APIOS Coordination Office	-	-	-	-	6252.2	7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6252.2	7.0
Niagara River Improvement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	518.2	2.0
St Clair/Detroit/St Mary's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	554.1	4.0
Hazardous Contaminants	232.0	1.9	152.8	1.3	232.0	1.9	-	-	308.4	2.8	-	-	-	-	-	-	1389.8	12.5	-	-	2931.8	25.5
PROG ADMINISTRATION (REGIONS)	617.0	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9451.0	5.0
ENVIR. COMP. CORP.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	417.2	3.0
ENVIRONMENTAL ASSESSMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1488.8	28.0	1488.8	28.0
COMPLIANCE & ENFORCEMENT	4663.3	63.8	586.8	11.7	61.9	1.1	3028.6	57.9	3846.2	67.0	1755.3	30.7	4.5	0.1	27.4	0.6	998.1	20.3	961.9	17.4	27352.4	456.1
Northwestern Region	236.2	1.5	35.6	0.6	22.5	0.4	161.2	2.9	219.2	3.9	129.3	3.6	-	-	-	-	74.9	1.1	63.2	1.1	2285.2	36.1
Northeastern Region	486.0	6.1	17.1	0.3	1.6	-	384.0	8.0	411.4	5.7	312.0	5.4	-	-	-	-	-	-	164.5	2.8	3567.1	57.2
Southwestern Region	692.7	9.8	69.2	1.3	7.3	0.1	448.7	8.1	568.2	10.3	69.2	1.3	-	-	-	-	276.8	5.1	116.5	2.1	3952.1	66.1
West Central Region	1102.2	18.0	66.8	1.3	27.3	0.6	258.1	5.1	328.0	6.4	75.9	1.5	-	-	-	-	82.0	2.9	154.9	3.0	3391.8	57.5
Central Region	1127.9	15.7	153.9	3.8	-	-	928.8	16.7	932.9	13.8	538.6	9.9	-	-	23.2	0.5	225.3	4.6	382.3	5.2	6184.8	103.4
Southeastern Region	357.8	3.2	101.2	1.8	3.2	-	382.7	8.3	385.9	8.3	375.0	4.3	4.5	0.1	4.2	0.1	107.7	2.3	136.7	2.8	3724.0	60.8
Investigations & Enforcement	510.5	9.5	143.0	2.6	-	-	473.1	8.8	1000.6	18.6	255.3	4.7	-	-	-	-	231.4	4.3	23.8	0.4	3403.6	63.0
Spills Action Centre	150.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	843.8	12.0
ENV APPROVALS & TECH SUPPORT	2608.0	43.7	1085.3	17.7	499.0	8.4	735.0	13.9	478.7	9.3	3550.4	6.0	0.0	0.0	0.0	0.0	387.2	11.6	1372.0	26.1	16609.2	226.1
Exec. Dir. Approvals & Eng.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133.2	2.0
Northwestern Region	364.1	3.7	46.9	0.5	55.5	1.5	24.2	0.4	59.4	0.9	-	-	-	-	-	-	-	-	144.6	1.5	1145.5	16.3
Northeastern Region	415.0	6.9	-	-	264.4	4.1	150.6	1.5	89.1	1.7	21.5	0.4	-	-	-	-	127.6	1.8	32.3	0.5	1538.2	23.9
Southwestern Region	148.5	2.0	146.5	2.3	107.6	1.7	91.2	1.4	61.3	0.3	22.4	0.3	-	-	-	-	-	-	182.4	2.9	1553.4	22.7
West Central Region	357.9	7.0	127.7	2.0	10.0	0.1	90.4	1.4	114.8	1.8	25.8	0.4	-	-	-	-	28.7	0.7	54.5	0.9	1474.2	22.8
Central Region	669.1	9.9	429.6	7.8	-	-	-	-	-	-	55.0	1.0	-	-	-	-	-	-	175.1	2.7	2164.0	36.0
Southeastern Region	136.2	2.3	62.6	1.2	61.5	1.0	162.8	3.5	52.2	1.0	57.4	1.1	-	-	-	-	15.6	0.3	101.9	2.1	1298.0	22.8
Environmental Approvals	525.2	11.9	272.0	3.9	-	-	215.8	5.7	101.9	3.6	3368.3	2.8	-	-	-	-	215.3	8.8	681.2	15.5	7302.7	79.6

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ENVIR. ASSES. BOARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1366.6	8.0	1366.6	8.0
PROJECT ENGINEERING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139010.2	50.0
UTILITY OPERATIONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	643.4	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79584.6	669.0
Northwestern Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3002.2	30.0
Northeastern Region	-	-	-	-	-	-	-	-	-	-	14.2	0.5	-	-	-	-	-	-	-	-	7304.8	68.0
Southwestern Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15984.5	172.0
West Central Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10823.4	107.0
Central Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34068.9	283.0
Southeastern Region	-	-	-	-	-	-	-	-	-	-	629.2	3.3	-	-	-	-	-	-	-	-	8400.8	89.0
ONTARIO WASTE MGT CORPORATION	-	-	-	-	-	-	-	-	14200.0	-	-	-	-	-	-	-	-	-	-	-	14200.0	0.0
	17899.3	200.5	4552.4	56.2	10907.4	92.1	7823.9	111.7	21966.6	122.3	6139.9	42.8	4447.4	8.7	2813.3	9.3	3232.6	46.4	5423.6	83.3	366334.7	2186.8

MANAGEMENT BY RESULTS REVENUE FILE: 1986-87 Preliminary Actuals

PROJECT TITLES:	Reg of Comm Water Supply	Operation of MOE Water Supply Fac	Water Services Infrastructure	Reg of Comm Sewage Treat Facility Discharges	Oper of MOE Sewage Treat Facilities	Sewage Serv Infra-Structure	Surface Gndwater Mgt	Mgt of Ind. Point Sources of Water Poll	Mgt of Non-Point Sources of Water Poll	Mgt of Trans-Boundary Water Poll
Page 1	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
GOVERNMENT OF CANADA	0.0	0.0	0.0	765.9	0.0	4,000.0	0.0	0.0	1023.5	510.6
Gr Lakes Agrmt (Sewage Fac)	-	-	-	-	-	4,000.0	-	-	-	-
Gr Lakes Agrmt (Surveillance)	-	-	-	765.9	-	-	-	-	1023.5	510.6
REIMBURSEMENT OF EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Clean-up Costs	-	-	-	-	-	-	-	100.0	-	-
FEES, LICENSES AND PERMITS	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0
Pesticides	-	-	-	-	-	-	-	-	-	-
Private Sewage	-	-	-	-	-	-	-	-	-	-
Well Drillers	-	-	-	-	-	-	15.0	-	-	-
SALES AND RENTALS	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Resource Recovery Plant	-	-	-	-	-	-	-	-	-	-
Other	-	-	20.0	-	-	-	-	-	-	-

PROJECT TITLES:	Reg of Comm Water Supply	Operation of MOE Water Supply Fac	Water Services Infrastructure	Reg of Comm Sewage Treat Facility	Oper of MOE Sewage Treat Facilities	Sewage Serv Infra-Structure	Surface Gndwater Mgt	Mgt of Ind. Point Sources of	Mgt of Non-Point Sources of	Mgt of Trans-Boundary Water Poll
Page 2	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
UTILITY SERVICES CHARGES	0.0	50,700.0	0.0	0.0	79,300.0	0.0	0.0	0.0	0.0	0.0
RECOVERY PRIOR YRS EXPENDITURE	0.0	0.0	115.0	0.0	0.0	115.0	0.0	0.0	0.0	0.0
MISCELLANEOUS	0.0	8.5	130.0	0.0	8.5	128.5	0.0	37.5	0.0	0.0
REPMT LOANS, ADVANCES, INVESTMT	0.0	0.0	4,655.0	0.0	0.0	21,345.0	0.0	0.0	0.0	0.0
Term Agreements	-	-	4,655.0	-	-	-	-	-	-	-
Service Agreements	-	-	-	-	-	21,345.0	-	-	-	-
PMTS TO TRUST& SPEC PURP ACCTS	0.0	0.0	486.4	0.0	0.0	1,413.6	0.0	0.0	0.0	0.0
Sinking Fund	-	-	179.2	-	-	520.8	-	-	-	-
Reserve Fund	-	-	307.2	-	-	892.8	-	-	-	-
Waste Well Disposal Sec. Fund	-	-	-	-	-	-	-	-	-	-
Waste Disposal Site Trst Fund	-	-	-	-	-	-	-	-	-	-
TOTALS: ---)	0.0	50,708.5	5,406.4	765.9	79,308.5	27,002.1	15.0	137.5	1023.5	510.6

Page 3	Mgt of Point Sources of Air Poll #11	Mgt of Non-Pt Sources of Air Poll #12	Mgt of Trans Boundary Air Poll & Atmos Deposition #13	Mgt of Mun Wastes dir to Landfill Sites #14	Mgt of Special Wastes #15	Use of Sewage Sludge/ Mgt of Subsurface Sewage System #16	Source Separation #17	Resource Recovery #18	Pesticides Control #19	Env Assessmt and Plan Review #20	TOTAL
GOVERNMENT OF CANADA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6,300.0
Gr Lakes Agrmt [Sewage Fac]	-	-	-	-	-	-	-	-	-	-	4,000.0
Gr Lakes Agrmt [Surveillance]	-	-	-	-	-	-	-	-	-	-	2,300.0
REIMBURSEMENT OF EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Clean-up Costs	-	-	-	-	-	-	-	-	-	-	
FEES, LICENSES AND PERMITS	0.0	0.0	0.0	0.0	0.0	190.0	0.0	0.0	400.0	0.0	595.0
Pesticides	-	-	-	-	-	-	-	-	400.0	-	400.0
Private Sewage	-	-	-	-	-	190.0	-	-	-	-	190.0
Well Drillers	-	-	-	-	-	-	-	-	-	-	15.0
SALES AND RENTALS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,500.0	0.0	0.0	1,520.0
Resource Recovery Plant	-	-	-	-	-	-	-	1,500.0	-	-	1,500.0
Other	-	-	-	-	-	-	-	-	-	-	20.0

	Mgt of Point Sources of Air Poll	Mgt of Non-Pt Sources of Air Poll	Mgt of Trans Boundary Air Poll & Atmos	Mgt of Mun Wastes dir to Landfill	Mgt of Special Wastes	Use of Sewage Sludge/ Mgt of Subsurface	Source Separation	Resource Recovery	Pesticides Control	Env Assessmt and Plan Review	TOTAL
Page 4	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	
UTILITY SERVICES CHARGES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	130,000.0
RECOVERY PRIOR YRS EXPENDITURE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	230.0
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	313.0
REPMT LOANS, ADVANCES, INVESTMT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26,000.0
Term Agreements	-	-	-	-	-	-	-	-	-	-	4,555.0
Service Agreements	-	-	-	-	-	-	-	-	-	-	21,345.0
PMTS TO TRUST& SPEC PURP ACCTS	0.0	0.0	0.0	0.0	48.9	0.0	0.0	0.0	0.0	0.0	1,348.9
Sinking Fund	-	-	-	-	-	-	-	-	-	-	700.0
Reserve Fund	-	-	-	-	-	-	-	-	-	-	1,200.0
Waste Well Disposal Sec. Fund	-	-	-	-	44.0	-	-	-	-	-	44.0
Waste Disposal Site Trst Fund	-	-	-	-	4.9	-	-	-	-	-	4.9
	0.0	0.0	0.0	0.0	48.9	180.0	0.0	1,500.0	400.0	0.0	167,006.9

MANAGEMENT BY RESULTS EXPENDITURES: 1987-88 Proposed Expenditures — RECONCILIATION OF EXPENDITURES
January 1987

PROJECT TITLES:	Reg of Comm Water Supply		Operation of MOE Water Supply Fac		Water Services Infrastructure		Reg of Comm Sewage Treat Facility Discharges		Oper of MOE Sewage Treat Facilities		Sewage Serv Infra-Structure		Surface Gndwater Mgt		Mgt of Ind. Point Sources of Water Poll		Mgt of Non-Point Sources of Water Poll		Mgt of Trans-Boundary Water Poll	
Page 1	#1		#2		#3		#4		#5		#6		#7		#8		#9		#10	
ACTIVITY/Organisation																				
ANALYSIS RESEARCH AND PLANNING	515.8	-	-	-	-	-	515.8	-	-	-	-	-	-	-	515.8	-	-	-	-	-
LEGAL SERVICES	41.8	0.6	41.8	0.6	58.4	0.9	68.4	1.0	41.8	0.6	58.4	0.9	16.7	0.3	170.2	2.5	68.4	1.0	85.1	1.3
CAPITAL MGT AND REVENUE (Part 2 of Financial and Capital Management Branch)	-	-	354.4	7.1	252.3	4.5	-	-	775.7	15.1	536.5	12.5	-	-	-	-	-	-	-	-
PROG ADMIN (SUPPORT SERVICES)	31.0	0.5	-	-	-	-	-	-	-	-	-	-	-	-	31.0	0.5	-	-	31.0	0.5
AIR RESOURCES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WATER RESOURCES	2773.5	29.7	-	-	46.0	1.2	4268.2	27.3	86.6	0.7	1238.5	0.9	567.1	7.7	4301.2	53.9	5104.6	38.2	1731.9	16.6
WASTE MANAGEMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LABORATORY SERVICES	2414.9	44.7	970.1	23.4	0.0	0.0	559.8	12.5	427.1	11.6	0.0	0.0	0.0	0.0	1753.6	19.1	4143.5	67.2	535.5	14.7
Laboratory Services Branch	1789.7	29.3	728.7	18.7	-	-	465.9	10.4	298.7	8.0	-	-	-	-	1017.3	11.3	3776.4	58.5	465.9	13.2
Northwest Lab	373.0	8.5	121.6	2.0	-	-	6.6	0.1	5.8	0.1	-	-	-	-	309.3	5.2	162.3	2.2	59.9	1.2
Southwest Lab	83.7	2.8	53.0	1.7	-	-	54.5	1.7	83.6	2.6	-	-	-	-	398.8	2.4	149.4	4.9	9.7	0.3
Southeast Lab	168.5	4.1	66.8	1.0	-	-	32.8	0.3	39.0	0.9	-	-	-	-	28.2	0.2	55.4	1.6	-	-

Page 2	#1		#2		#3		#4		#5		#6		#7		#8		#9		#10	
INTERGOV REL & STRATEGIC PROJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	354.8	3.0	162.7	1.4	2316.7	14.0
Office of the ADM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	107.8	1.0	-	-	107.8	1.0
Intergov Relations Office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	337.2	4.0
APIDS Coordination Office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Niagara River Improvement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	640.3	3.0
Detroit/St Clair/St Mary's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	984.4	4.0
Hazardous Contaminants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247.0	2.0	162.7	1.4	247.0	2.0
PROG ADMINISTRATION (REGIONS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10324	2.5	-	-	-	-
ENVIR. COMP. CORP.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1489.9	3.0	-	-	-	-
ENVIRONMENTAL ASSESSMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMPLIANCE & ENFORCEMENT	1078.5	22.1	506.9	10.8	476.0	9.8	950.7	19.7	702.6	11.3	411.4	8.5	213.1	4.4	4767.1	76.5	1439.9	32.0	107.8	2.3
Northwestern Region	115.9	2.4	115.9	2.7	28.2	0.5	76.1	1.6	120.8	2.8	19.8	0.4	10.0	0.1	541.0	7.8	142.3	3.3	19.8	0.4
Northeastern Region	204.2	3.8	16.4	0.3	194.3	3.7	52.7	0.9	3.4	0.1	128.5	2.3	-	-	948.4	15.2	171.4	3.0	1.5	-
Southwestern Region	280.8	5.3	-	-	31.1	0.7	196.6	4.1	-	-	34.5	0.8	-	-	853.7	14.9	224.2	4.7	-	-
West Central Region	43.3	1.0	5.8	0.1	25.9	0.6	86.5	1.9	308.5	3.3	34.6	0.7	63.4	1.4	481.3	6.8	95.1	2.1	86.5	1.9
Central Region	154.1	3.1	257.2	5.8	61.7	1.1	267.2	5.4	-	-	61.7	1.1	-	-	673.7	11.5	339.0	8.3	-	-
Southeastern Region	224.7	5.4	101.6	1.9	134.8	3.2	129.4	3.1	269.9	5.1	132.3	3.2	91.2	2.1	517.1	5.3	224.9	3.4	-	-
Investigations & Enforcement	55.5	1.1	-	-	-	-	142.2	2.7	-	-	-	-	48.5	0.8	471.7	9.0	62.5	1.2	-	-
Spills Action Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	280.2	6.0	180.5	6.0	-	-
ENV APPROVALS & TECH SUPPORT	372.8	5.2	10.9	0.2	700.3	12.2	550.6	9.6	136.7	1.3	533.3	9.3	759.8	12.8	1245.2	18.2	1521.3	24.4	61.0	1.1
Exec. Dir. Approvals & Eng.	-	-	-	-	134.8	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northwestern Region	-	-	-	-	-	-	6.5	0.1	5.5	0.1	-	-	115.5	1.8	223.8	3.8	82.5	1.2	28.9	0.5
Northeastern Region	-	-	-	-	-	-	15.8	0.2	-	-	6.3	0.1	77.2	1.0	247.5	3.9	100.9	2.1	1.2	-
Southwestern Region	-	-	-	-	112.6	1.9	122.8	2.1	20.4	0.3	-	-	58.5	1.4	108.2	1.8	361.3	5.0	-	-
West Central Region	15.4	0.4	5.6	0.1	9.8	0.2	30.9	0.5	110.8	0.9	16.8	0.2	124.8	2.0	112.2	0.6	192.1	3.1	30.9	0.5
Central Region	88.9	1.0	-	-	16.1	0.3	82.5	1.2	-	-	-	-	207.2	4.8	144.8	2.7	285.5	5.6	-	-
Southeastern Region	16.6	0.1	5.3	0.1	16.0	0.3	26.8	0.5	-	-	32.1	0.6	176.6	1.8	106.8	1.7	284.1	5.6	-	-
Environmental Approvals	251.9	3.7	-	-	411.8	7.5	265.3	4.8	-	-	478.1	9.0	-	-	301.9	3.7	214.8	1.8	-	-

Page 3	#1		#2		#3		#4		#5		#6		#7		#8		#9		#10	
ENVIR. ASSES. BOARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROJECT ENGINEERING	583.4	5.5	575.3	3.3	76721.5	14.1	622.4	3.7	771.3	4.5	77104.1	17.9	-	-	-	-	-	-	-	-
UTILITY OPERATIONS	0.0	0.0	28284.0	223.2	0.0	0.0	0.0	0.0	55412.6	450.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northwestern Region	-	-	1534.9	13.9	-	-	-	-	1860.9	16.1	-	-	-	-	-	-	-	-	-	-
Northeastern Region	-	-	1808.0	18.0	-	-	-	-	5297.0	49.5	-	-	-	-	-	-	-	-	-	-
Southwestern Region	-	-	10425.1	95.2	-	-	-	-	6948.1	80.8	-	-	-	-	-	-	-	-	-	-
West Central Region	-	-	1892.9	18.7	-	-	-	-	9371.5	88.3	-	-	-	-	-	-	-	-	-	-
Central Region	-	-	10425.8	54.6	-	-	-	-	25031.9	151.4	-	-	-	-	-	-	-	-	-	-
Southeastern Region	-	-	2197.3	22.8	-	-	-	-	5903.2	64.8	-	-	-	-	-	-	-	-	-	-
ONT WASTE MGT CORP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS: ——)	7811.7	108.3	30753.4	268.6	78254.5	42.7	7535.9	72.8	58354.4	496.0	79882.2	50.6	1556.7	25.2	24953	179.2	12440.4	164.2	4869.0	50.5

CAPITAL COMPONENT(C): (74,751) (76,262)

Page 4 ACTIVITY/Organisation	Mgt of Point Sources of Air Poll #11		Mgt of Non-Pt Sources of Air Poll #12		Mgt of Trans Boundary Air Poll & Atmos Deposition #13		Mgt of Mun Wastes dir to Landfill Sites #14		Mgt of Special Wastes #15		Use of Sewage Sludge/ Mgt of Subsurface Sewage System #16		Source Separation #17		Resource Recovery #18		Pesticides Control #19		Env Assessmt and Plan Review #20		T O T A L S	
ANALYSIS RES & PLANNING	756.6	-	-	-	-	-	48.0	-	48.0	-	-	-	-	-	-	-	-	-	-	-	2400.0	0.0
LEGAL SERVICES	85.1	1.3	41.8	0.6	170.2	2.6	270.1	4.0	101.8	1.5	128.4	1.9	25.0	0.4	25.0	0.4	85.1	1.3	85.1	1.3	1668.6	25.0
CAPITAL MGT AND REVENUE (Part 2 of Financial and Capital Management Branch)	-	-	-	-	-	-	-	-	72.1	1.8	-	-	-	-	-	-	-	-	-	-	2001.0	41.0
PROG ADMIN (SUPPORT SERVICES)	31.0	0.5	31.0	0.5	31.0	0.5	30.9	0.5	30.9	0.5	-	-	-	-	-	-	-	-	-	-	247.8	4.0
AIR RESOURCES	5498.4	65.4	1283.8	17.0	1026.9	19.6	46.6	0.8	85.6	1.0	-	-	-	-	-	-	-	-	109.0	2.2	8050.3	106.0
WATER RESOURCES	27.8	0.4	-	-	944.8	13.7	37.2	0.2	37.2	0.2	86.6	0.4	-	-	-	-	247.7	0.7	37.1	0.2	21536.0	192.0
WASTE MANAGEMENT	-	-	-	-	-	-	2980.5	20.2	3589.7	38.7	-	-	5836.9	8.5	3648.8	8.6	-	-	-	-	16055.9	76.0
LABORATORY SERVICES	2186.2	21.9	991.2	7.6	1319.1	37.8	1146.3	15.6	36.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	142.2	0.0	0.0	0.0	16625.5	277.0
Laboratory Services Branch	2159.0	21.4	991.2	7.6	1313.8	37.7	1074.8	14.0	36.0	0.9	-	-	-	-	-	-	142.2	-	-	-	14259.6	231.0
Northwest Lab	27.2	0.5	-	-	5.3	0.1	9.1	0.1	-	-	-	-	-	-	-	-	-	-	-	-	1090.1	20.0
Southwest Lab	-	-	-	-	-	-	17.2	0.6	-	-	-	-	-	-	-	-	-	-	-	-	849.9	17.0
Southeast Lab	-	-	-	-	-	-	45.2	0.9	-	-	-	-	-	-	-	-	-	-	-	-	435.9	9.0

Page 5	#11		#12		#13		#14		#15		#16		#17		#18		#19		#20			
INTERGOV REL & HAZ CONT COORD	247.0	2.0	162.7	1.4	6684.0	10.0	0.0	0.0	328.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1480.0	13.2	0.0	0.0	11736.4	48.0
Office of the ADM	-	-	-	-	107.8	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	323.4	3.0
Intergov Rel Office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	337.2	4.0
APIOS Coordination Office	-	-	-	-	6329.2	7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6329.2	7.0
Niagara River Improvement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	640.3	3.0
St Clair/Detroit/St Mary's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	984.4	4.0
Hazardous Contaminants	247.0	2.0	162.7	1.4	247.0	2.0	-	-	328.5	3.0	-	-	-	-	-	-	1480.0	13.2	-	-	3121.9	27.0
PROG ADMINISTRATION (REGIONS)	721.1	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11045.1	5.0
ENVIR. COMP. CORP.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1489.9	3.0
ENVIRONMENTAL ASSESSMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1492.9	28.0	1492.9	28.0
COMPLIANCE & ENFORCEMENT	4403.2	68.3	565.3	12.6	57.4	1.1	2899.9	62.0	3708.7	71.6	1682.7	32.6	4.4	0.1	25.8	0.6	957.9	21.9	912.3	18.8	25871.6	487.0
Northwestern Region	209.2	1.6	31.5	0.5	19.9	0.4	142.9	3.1	194.2	4.1	114.5	3.8	-	-	-	-	66.3	1.2	56.0	1.2	2024.2	38.0
Northeastern Region	467.1	6.2	16.4	0.3	1.5	-	369.1	8.1	395.4	5.8	299.8	5.5	-	-	-	-	-	-	158.1	2.8	3428.2	58.0
Southwestern Region	656.0	10.7	65.5	1.4	7.0	0.1	417.3	8.8	538.1	11.2	65.5	1.4	-	-	-	-	262.1	5.6	110.3	2.3	3742.7	72.0
West Central Region	1046.4	19.1	63.4	1.4	25.9	0.6	245.0	5.4	311.4	6.8	72.1	1.6	-	-	-	-	77.8	3.1	147.1	3.2	3220.0	61.0
Central Region	1054.3	17.2	143.8	4.2	-	-	868.2	18.3	872.1	15.1	503.5	10.7	-	-	21.7	0.5	210.6	5.0	282.6	5.7	5781.4	113.0
Southeastern Region	350.3	3.5	99.1	2.0	3.1	-	374.7	9.1	377.8	9.1	367.1	4.7	4.4	0.1	4.1	0.1	105.4	2.5	133.9	3.2	3645.8	67.0
Investigations & Enforcement	520.3	10.0	145.6	2.7	-	-	482.8	9.2	1019.7	19.5	260.2	4.9	-	-	-	-	235.7	4.5	24.3	0.4	3469.0	66.0
Spills Action Centre	99.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	560.3	12.0
ENV APPROVALS & TECH SUPPORT	2611.9	44.8	1076.9	17.7	506.3	8.8	739.7	14.8	479.9	9.8	3757.9	6.3	0.0	0.0	0.0	0.0	390.2	12.4	1341.7	27.5	16736.4	236.0
Exec. Dir. Approvals & Eng.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134.8	2.0
Northwestern Region	373.8	3.6	48.2	0.5	57.0	1.5	24.8	0.4	61.0	0.9	-	-	-	-	-	-	-	-	148.4	1.5	1175.9	16.0
Northeastern Region	425.7	7.2	-	-	271.2	4.3	154.5	1.6	91.4	1.8	22.2	0.4	-	-	-	-	130.9	1.9	33.0	0.5	1577.8	25.0
Southwestern Region	137.4	2.1	143.3	2.4	105.2	1.8	93.2	1.5	59.9	0.3	21.9	0.3	-	-	-	-	-	-	178.4	3.1	1519.1	24.0
West Central Region	349.8	7.2	124.8	2.0	9.8	0.1	88.4	1.4	112.2	1.8	25.2	0.4	-	-	-	-	28.0	0.7	53.3	0.9	1440.8	23.0
Central Region	660.3	9.4	424.4	7.3	-	-	-	-	-	-	54.3	1.0	-	-	-	-	-	-	173.0	2.7	2137.1	36.0
Southeastern Region	139.7	2.4	64.2	1.3	63.1	1.1	167.0	3.7	53.5	1.1	58.9	1.2	-	-	-	-	16.0	0.3	104.4	2.2	1331.1	24.0
Environmental Approvals	525.2	12.9	272.0	4.2	-	-	215.8	6.2	101.5	3.9	3575.4	3.0	-	-	-	-	215.3	9.5	651.2	16.6	7475.8	86.0

PROJECT TITLES:	Reg of Comm Water Supply	Operation of MOE Water Supply Fac	Water Services Infrastructure	Reg of Comm Sewage Treat Facility	Oper of MOE Sewage Treat Facilities	Sewage Serv Infra-Structure	Surface Gndwater Mgt	Mgt of Ind. Point Sources of	Mgt of Non Point Sources of
Page 2	#1	#2	#3	#4	#5	#6	#7	#8	#9
UTILITY SERVICES CHARGES	0.0	52,650.0	0.0	0.0	82,350.0	0.0	0.0	0.0	0.0
RECOVERY PRIOR YRS EXPENDITURE	0.0	0.0	132.5	0.0	0.0	132.5	0.0	0.0	0.0
MISCELLANEOUS	0.0	1.4	20.8	0.0	1.4	20.4	0.0	6.0	0.0
REPMT LOANS,ADVANCES, INVESTMT	0.0	0.0	4,924.0	0.0	0.0	22,576.0	0.0	0.0	0.0
Term Agreements	-	-	4,924.0	-	-	-	-	-	-
Service Agreements	-	-	-	-	-	22,576.0	-	-	-
PMTS TO TRUST& SPEC PURP ACCTS	0.0	0.0	468.8	0.0	0.0	1,339.2	0.0	0.0	0.0
Sinking Fund	-	-	153.6	-	-	446.4	-	-	-
Reserve Fund	-	-	307.2	-	-	892.8	-	-	-
Waste Well Disposal Sec. Fund	-	-	-	-	-	-	-	-	-
Waste Disposal Site Trst Fund	-	-	-	-	-	-	-	-	-
TOTALS: ---)	0.0	52,651.4	5,558.1	532.8	82351.4	28,868.1	15.0	6.0	712.0

Page 6	#11		#12		#13		#14		#15		#16		#17		#18		#19		#20			
ENVIR. ASSES. BOARD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1539.3	0.0	1539.3	0.0
PROJECT ENGINEERING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15E378.0	49.0
UTILITY OPERATIONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	669.4	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	84366.0	678.0
Northwestern Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3335.8	38.0
Northeastern Region	-	-	-	-	-	-	-	-	-	-	13.8	0.5	-	-	-	-	-	-	-	-	7118.8	68.0
Southwestern Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17373.2	176.0
West Central Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11264.4	107.0
Central Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36457.7	206.0
Southeastern Region	-	-	-	-	-	-	-	-	-	-	655.6	3.4	-	-	-	-	-	-	-	-	8756.1	91.0
ONTARIO WASTE MGT CORPORATION	-	-	-	-	-	-	-	-	13600.0	-	-	-	-	-	-	-	-	-	-	-	13500.0	0.0
	16568.3	207.1	4152.7	57.4	10739.7	94.1	8199.2	118.1	22118.4	129.0	6325.0	45.1	5866.3	9.0	3700	9.6	3303.1	49.5	5517.4	86.0	392900.7	2263.0

CAPITAL COMPONENT(C): (2700)

Page 3	Mgt of Point Sources of Air Poll #11	Mgt of Non-Pt Sources of Air Poll #12	Mgt of Trans Boundary Air Poll & Atmos Deposition #13	Mgt of Mun Wastes dir to Landfill Sites #14	Mgt of Special Wastes #15	Use of Sewage Sludge/ Mgt of Subsurface Sewage System #16	Source Separation #17	Resource Recovery #18	Pesticides Control #19	Env Assessmt and Plan Review #20	TOTAL
GOVERNMENT OF CANADA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5,600.0
Gr Lakes Agrmt (Sewage Fac)	-	-	-	-	-	-	-	-	-	-	4,000.0
Gr Lakes Agrmt (Surveillance)	-	-	-	-	-	-	-	-	-	-	1,600.0
REIMBURSEMENT OF EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FEES, LICENSES AND PERMITS	0.0	0.0	0.0	0.0	0.0	186.0	0.0	0.0	420.0	0.0	621.0
Pesticides	-	-	-	-	-	-	-	-	420.0	-	420.0
Private Sewage	-	-	-	-	-	186.0	-	-	-	-	186.0
Well Drillers	-	-	-	-	-	-	-	-	-	-	15.0
SALES AND RENTALS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	150.0	0.0	0.0	170.0
Resource Recovery Plant	-	-	-	-	-	-	-	150.0	-	-	150.0
Other	-	-	-	-	-	-	-	-	-	-	20.0

.E: 1987-88 Proposed Revenues

g of Comm ter Supply #1	Operation of MOE Water Supply Fac #2	Water Services Infrastructure #3	Reg of Comm Sewage Treat Facility Discharges #4	Oper of MOE Sewage Treat Facilities #5	Sewage Serv Infra-Structure #6	Surface Gndwater Mgt #7	Mgt of Ind. Point Sources of Water Poll #8	Mgt of Non-Point Sources of Water Poll #9	Mgt of Trans-Boundary Water Poll #10
0.0	0.0	0.0	532.8	0.0	4,000.0	0.0	0.0	712.0	355.2
-	-	-	-	-	4,000.0	-	-	-	-
-	-	-	532.8	-	-	-	-	712.0	355.2
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	15.0	-	-	-
0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-	-	-	-	-	-	-	-	-	-
-	-	20.0	-	-	-	-	-	-	-

	Mgt of Point Sources of Air Poll	Mgt of Non-Pt Sources of Air Poll	Mgt of Trans Boundary Air Poll & Atmos	Mgt of Mun Wastes dir to Landfill	Mgt of Special Wastes	Use of Sewage Sludge/ Mgt of Subsurface	Source Separation	Resource Recovery	Pesticides Control	Env Assessmt and Plan Review	TOTAL
Page 4	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	
UTILITY SERVICES CHARGES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	135,000.0
RECOVERY PRIOR YRS EXPENDITURE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	265.0
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0
REPMT LOANS, ADVANCES, INVESTMT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27,500.0
Term Agreements	-	-	-	-	-	-	-	-	-	-	4,924.0
Service Agreements	-	-	-	-	-	-	-	-	-	-	22,576.0
PMTS TO TRUST& SPEC PURP ACCTS	0.0	0.0	0.0	0.0	53.0	0.0	0.0	0.0	0.0	0.0	1,853.0
Sinking Fund	-	-	-	-	-	-	-	-	-	-	600.0
Reserve Fund	-	-	-	-	-	-	-	-	-	-	1,200.0
Waste Well Disposal Sec. Fund	-	-	-	-	48.0	-	-	-	-	-	48.0
Waste Disposal Site Trst Fund	-	-	-	-	5.0	-	-	-	-	-	5.0
TOTALS: —)	0.0	0.0	0.0	0.0	53.0	186.0	0.0	150.0	420.0	0.0	171,059.0

TD
178.7
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